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Department of Health and Environmental Sciences
STATE OF MONTANA HELENA, MONTANA 59601

A. C. Knight M.D., F.C.C.P.
Director

April 10, 1978

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Jefferson County Sheriff, Courthouse, Boulder, MT 59632
Environmental Information Center, Box 12, Helena, MT 59601
Maronick Company, Box 486, East Helena, MT 59635

Re: Maronick's Second Addition to
Saddle Mountain Estates
Jefferson County

Ladies & Gentlemen:

The enclosed preliminary environmental review has been prepared for Maronick's Second Addition to Saddle Mountain Estates in Jefferson County and is submitted for your consideration. Questions and comments will be accepted until April 20, 1978. One extension of time not to exceed seven days will be granted upon request if there is sufficient reason for the request. All comments should be sent to the undersigned.

Sincerely,

Edward W. Casne, Chief
Subdivision Bureau
Environmental Sciences Division
(406) 449-3946

EWC:APK:mk
Enclosures

PRELIMINARY ENVIRONMENTAL REVIEW

Department of Health and Environmental Sciences

Division/Bureau Environmental Sciences Division -- Subdivision Bureau

Project or Application Maronick's Second Addition to Saddle Mountain Estates, Jefferson Co.

Description of Project The proposed development would consist of 140.82 acres being divided into 81 lots, 80 of these for single family residences and one for a reservoir site for the public water system. The proposed development is located in Section 24, T9N, R3W, M.P.M., Jefferson County, approximately 1 1/2 miles southeast of the Montana City School. It would be served by a public water system and individual sewage disposal systems.

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Terrestrial and aquatic life and habitats			X			
2. Water quality, quantity and distribution			X			
3. Geology and soil quality, stability and moisture			X			Comment (1)
4. Vegetation cover, quantity and quality			X			
5. Aesthetics			X			
6. Air quality			X			
7. Unique, endangered, fragile, or limited environmental resources				X		
8. Demands on environmental resources of land, water, air and energy			X			
9. Historical and archaeological sites					X	

POTENTIAL IMPACTS ON HUMAN ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Social structures and mores		X				Comment (2)
2. Cultural uniqueness and diversity			X			
3. Local and state tax base and tax revenue			X			
4. Agricultural or industrial production			X			
5. Human health				X		
6. Quantity and distribution of community and personal income			X			
7. Access to and quality of recreational and wilderness activities				X		
8. Quantity and distribution of employment			X			
9. Distribution and density of population and housing			X			
10. Demands for government services			X			
11. Industrial and commercial activity			X			
12. Demands for energy			X			Comment (3)
13. Locally adopted environmental plans and goals				X		
14. Transportation networks and traffic flows		X				Comment (4)

Other groups or agencies contacted or which may have overlapping jurisdiction. Information from Jefferson County Planning Board proceedings.

Individuals or groups contributing to this PER. Same.

Recommendation concerning preparation of EIS. Recommend not to prepare an EIS

PER Prepared by: Alfred P. Keppner

DATE: April 4, 1978

ESD-1

PRELIMINARY ENVIRONMENTAL REVIEW

Maronick's Second Addition to Saddle Mountain Estates
Jefferson County

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT -

1. Geology and soil quality, stability and moisture - Proposed location of drainfield sites on several lots has yet to be determined.

POTENTIAL IMPACT ON HUMAN ENVIRONMENT -

2. Social structures and mores - There has been some conflict between the residents of Maronick First Addition to Saddle Mountain Estates and the local ranching community due to cattle wandering into the subdivision. This is open range country and it is the obligation of a property owner to fence livestock out of their property. Future conflicts may occur if fences are not maintained or gates are left open.

3. Demands for energy - Being a bedroom community for Helena, additional petroleum products will be expended to transport residence of the proposed development to and from work and shopping.

4. Transportation networks and traffic flow - The county road that would serve the proposed development is rough much of the year. During times of snow melt or heavy precipitation passage can become difficult. Additional traffic can only aggrevate the situation. In addition, the lack of culverts under access roads at their intersection with the county road causes water to back up and made a quagmire of the road.

APK:mk

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Department of Health and Environmental Sciences
STATE OF MONTANA HELENA, MONTANA 59601

Air Quality Bureau
Cogswell Building
(406) 449-3454

~~John S. Anderson, M.D.
DIRECTOR~~
A. C. Knight, M.D.
Acting Director

STATE DOCUMENTS
DEC 13 1976

December 10, 1976

Re: Hoerner-Waldorf Preliminary Environmental Review

Ladies and Gentlemen:

On October 19, 1976, the Air Quality Bureau distributed the above referenced PER for public comment. Enclosed for your information is a summary of comments and our responses to those comments. Based on the comments received and our review of them, the Department has determined that no Environmental Impact Statement is necessary.

On this same basis, the Department has issued a renewal of Hoerner-Waldorf's construction permit subject to certain conditions. The major conditions are requirements for "best available control technology", stack and ambient air monitoring, and a meteorological study funded by Hoerner-Waldorf.

Thank you for your interest and involvement in this matter.

Sincerely,

Michael D. Roach, Chief
Air Quality Bureau

MDR:JNB:jms

Enclosure

RESPONSE TO AND SUMMARY OF

COMMENTS ON THE HOERNER-WALDORF PER

A total of 50 groups or individuals submitted written comments on the Department's Hoerner-Waldorf PER dated October 19, 1976. Of these 50, 42 made comments supporting the review and conclusions and eight commentors disagreed with either the review and conclusions or the basis for the review, or both.

The favorable comments, with a few exceptions, indicated their support for Hoerner-Waldorf's expansion plan as economically necessary. H-W's pollution control program was considered more than adequate by those in this group who commented on the subject. The use of "5D" wood was another area where those commenting indicated beneficial effects. Two other subjects provided a basis for the supportive comments:

1. The EIS in 1974 adequately evaluated the environmental impacts of the expansion.
2. There have not been any significant changes in the expansion plans.

The "unfavorable" comments cannot be dealt with so succinctly. The comments have addressed several topics and each topic is discussed individually.

ADEQUACY OF THE PER

Many of the comments concerning the adequacy of the Hoerner-Waldorf PER centered around whether the PER complied with the Department's rules, specifically rules MAC 16-2.2(2)-P2020 and P2030. Within this context, the purpose of the Department's PER rules must be considered in light of the statutory requirement that an environmental impact statement be prepared on ". . . major actions of state government significantly affect the quality of the human environment. . . ." (See Section 69-6504, R.C.M. 1947.)

All of the comments received concerning the language contained in Section 69-6504, R.C.M. 1947, misconstrue the purpose of the PER. The provisions of MEPA only apply once it has been determined that the action in question will significantly affect the human environment, thereby requiring the preparation of an environmental impact statement. Until that determination has been made, based on an analysis of the potential impacts, the detailed discussion called for by MEPA is not required. In other words, the PER is not intended to be, nor is it required to be an environmental impact statement. The PER is designed to enable a decision maker to initially determine what the potential impacts might be.

All the commentors referred to the specific language contained in rules MAC 16-2.2(2)-P2020 and P2030. Much emphasis was placed on the language which states that the PER must ". . . include at a minimum . . ." an evaluation of the projected impacts described in the PER rules. But, the commentors overlook the rules' specific statement that the PER evaluation is to be based upon the ". . . information contained in the completed application or project proposal and other available information. . ."

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(See rule MAC 16-2.2(2)-P2030(1). Thus, there is no requirement at the PER stage that the Department prepare a detailed study of the project. The PER is an in-house analysis conducted by the Department in order to project whether the potential impacts of state action will trigger the environmental impact statement process under MEPA.

Several comments questioned whether the PER would be adequate if the renewal application submitted by Hoerner-Waldorf was treated as a new permit application under the Montana Clean Air Act rules. The analysis required under the PER rules is the same regardless of whether the permit application is for a renewal or for a new permit. The Department is required to consider the same potential impacts and to arrive at a decision as to whether or not the action will trigger the environmental impact statement process.

The Department reaffirms the preliminary determination made in the PER that, based on an evaluation of the projected impacts, there is no need to prepare an environmental impact statement on the permit renewal requested by Hoerner-Waldorf. This determination has been made after considering the criteria for preparing an environmental impact statement enunciated in subsections (2) and (3) of rule MAC 16-2.2(2)-P2020. The Department believes that the decision to be made on the permit application does not constitute an action that constitutes a major state action having a significant impact on the human environment. This is especially true because the Department has already prepared an EIS and considered the potential impacts of the proposed expansion in granting the initial permit to Hoerner-Waldorf in 1974. All foreseeable economic, social and environmental impacts of the proposed expansion were discussed in that EIS. The only changes in potential impacts that must be assessed are the projected changes in the amount of cooling water to be discharged and the change in projected air emissions.

INCREASE IN WASTEWATER DISCHARGE

Hoerner-Waldorf's renewal application and the PER indicated a potential increase in contaminated effluent from 21.6 million gallons per day (mgd) in the 1974 EIS to 25.6 mgd. The PER noted this potential increase and several of the commentors addressed this topic. The PER indicated a minor potential impact, based on the Water Quality Bureau's assessment. The commentors, including the Fish and Game Department, stated that the increase in discharge could adversely affect river quality, and flora and fauna dependent on the river.

However, the 25.6 mgd figure was based on analysis of existing process streams projected to the expanded mill. H-W has identified several areas where process water recycling will be employed, reducing the contaminated discharge as calculated by at least 5.8 mgd thus reducing the expanded mills contaminated effluent volume from 25.6 mgd to less than 20 mgd. The recycling efforts may displace the use of clean cooling water and may require an increase in the discharge of clean, warm water. This warm water may require some cooling but the Water Quality Bureau indicated that H-W would have to apply for a modification to their discharge permit prior to any such discharge.

H-W's present MPDES permit expires in December of 1977. An application for a new MPDES permit must be submitted at least 180 days before the expiration date or 180 days before the anticipated additional discharge will occur. In short, any discharge in excess of the limitations contained in the present permit cannot occur until a new (or modified) permit has been granted. At the time that a new permit is applied for, the application will be reviewed under the Department's MEPA and Water Quality Rules.

AIR QUALITY AND HEALTH EFFECTS

Comments to this topic perhaps are the most significant ones related to impact of the expansion and renewal of the permit. The potential increase in fine particulate emissions and their resultant effects on humans is one concern. The AQB has reviewed H-W's emissions and control devices, both current and proposed, and concluded that there should be no increase in fine particulate emissions over the levels approved in 1974. The original permit conditions prohibiting increases in sulfate and particulate emissions prevents any increase in total emission rates. The control devices on the fine (0.3μ→2μ) particle sources seem to remove particles at a more or less constant efficiency throughout the range of sizes encountered.

Many of the comments addressed the effects of current levels of total suspended particulate (TSP) and soluble sulfate (SS) on human health, and the effect of Hoerner-Waldorf's emission on the current levels. These current levels of air quality exceed, in many cases, federal, state and county standards. These violations dictate that certain emission reductions must occur to achieve the standard. The necessary emission reductions required to achieve ambient air standards will, in all probability, include restrictions on several source categories, and Hoerner-Waldorf may well be in this group. Any such program will be necessarily based on the effect on the reductions on the ambient air quality.

Achievement of the ambient air quality standards is considered adequate to protect the public health, and these standards will be achieved. A health study, as requested by some commentors, would attempt to determine the effects of current levels of sulfate on human health and more particularly Hoerner-Waldorf's contribution to those effects.

When a health study was proposed as a condition of the expansion permit, the Department was contemplating a request by H-W for increased sulfate and particulate emission. The most stringent prohibition contemplated was no increase in the 1974 emission levels. The necessity for the health study was obviated when H-W agreed not to increase the subject emission levels. However, the department will request funds from the legislature for health studies in a number of areas in the state, including Missoula, where ambient air quality exceeds standards.

As the result of a meeting with representatives of the Missoula County Board of Health and Concerned Citizens for a Quality Environment in Helena on December 7, 1976, some of the people present expressed concern that the health study funding proposal should have been included in the Department's regular budget in order to assure passage by the legislature. Unfortunately, the Department's formal budget request has already been submitted to the Governor's Office and the Governor's budget proposal is now being printed. Therefore, the Department's only recourse is to submit a separate bill to the legislature for the health study proposal. The Department sincerely hopes that all of the people who have commented on this PER will support this vital study proposal.

The basis for the decision on the original and renewal application is that approval of the expansion plans will not aggravate the existing situation. H-W has reduced their emissions from 1974 levels by some 19% while air quality levels dropped in 1975, but increased in 1976. Previous analysis of the effects of H-W's emissions on ambient air quality at the locations of violations have shown H-W's contribution to be extremely low. Some additional data has been presented indicating

a possible relationship not previously believed to exist. Further analysis of the data indicates that H-W may be responsible for a noticeable contribution to TSP and SS levels. Dispersion modeling done by the AQB showed a significant contribution to TSP and SS levels, but showed that H-W was not, in and of itself, responsible for any violations. This modeling was preliminary in nature as it was based on estimated meteorological conditions, not measured values. Further, other analyses have shown a greater effect by H-W, while others have shown a much lesser effect. There is insufficient data to establish the relationship and H-W will be funding a meteorological study to obtain much of this necessary data. The study purpose will be collection and analysis of a minimum of 12 months of meteorological data that can be used to predict the effect of H-W's emissions on pollutant levels in the Missoula Valley. H-W's contribution to the study will not exceed $50,000.

REQUIREMENT FOR A NEW PERMIT

Several commentators have stated the changes in H-W's expansion plans have changed significantly enough to warrant a new and separate construction permit. The contention then is that the review of such a permit would be made against the immediate situation, and therefore, the expansion plans would not be included in the review basis.

Section 69-3911, R.C.M. 1947, addresses the Board's power to require permits for the construction installation, alteration or use of any machine, equipment, device, or facility which it finds may directly or indirectly cause or contribute to air pollution or which is intended primarily to prevent or control the emission of air pollutants. Pursuant to this section, MAC Section 16-2.14(1)-S1400 details the procedure for the issuance of permits. MAC 16-2.14(1)-S1400(2) says:

> "A permit shall be required from the administrator of the Division of Environmental Sciences of the Department for the construction, installation, or alteration of any new equipment or changes of process capable of emitting air contaminants to the atmosphere and any new, altered or revised equipment intended for eliminating, reducing or controlling emission of air contaminants from the following classes of operation. . ."

MAC 16-2.14(1)-S1400(3) says:

> "The application for a permit shall be accompanied by plans, specification, and such other information as the administrator deems necessary, except that the administrator may dispense with the submission of plans and specifications upon prior written agreement."

MAC 16-2.14(1)-S1400(4) requires that permits will not be transferable from one location to another or from one piece of equipment to another or from one person to another.

The intent of these sections is clearly to provide for review of any kinds of equipment that go in to a plant. The important consideration is to prohibit the installation of any equipment without prior review by this Department. MAC 16-2.14(1)-S1400(7) requires a permit renewal if construction, installation or alteration for which a permit has been issued is not completed within two years from the date of issuance of the permit. Subsection (7) is the only language in either the regulations or the Clean Air Act which speaks to the question of permit renewal.

In the case of Hoerner-Waldorf's proposed expansion, the Department permitted the entire expansion, not just a first phase or a second phase. Thus, Hoerner-Waldorf is required to apply for a renewal of the permit. The Department, in processing this application for renewal has followed precisely the same procedures of review that it would follow for a new permit. In the process of the permit renewal review, the Department has found that some pieces of equipment shall be changed. In considering these pieces of equipment change, the Department has applied the same stringent standards of review to those pieces of equipment that would be applied if the Hoerner-Waldorf application had been entitled "Application for Permit." Consequently, the labeling of the application as a permit renewal has in no way operated to circumvent the review process that is set out by the permit regulations. The distinction between a "permit renewal" and an application for a new permit is entirely formal. Substantively Hoerner-Waldorf's proposed changes in equipment have received the same review that it would receive if this application were requested a new permit.

NO GROUNDWATER CLASSIFICATION

The WQB has indicated that draft regulations regarding groundwater classifications have been prepared but that EPA will be promulgating regulations in the near future related to the same subject. Thus, the WQB is awaiting EPA before finalizing their rules. It must be emphasized, however, that there is a statutory standard that is applicable to all potential groundwater pollution situations. Section 69-4802 (9), R.C.M. 1947 of the Montana Water Pollution Control Act defines the term "state waters" to include both surface and groundwater. Section 69-4806, R.C.M. 1947 makes it unlawful to cause pollution of state waters. Pollution is defined in Section 69-4802(5) R.C.M. 1947 to include rendering state waters ". . . harmful, detrimental, or injurious to public health, recreation, safety, welfare, livestock, wild animals, birds, fish or other wildlife." Therefore, formal legal action can be taken under the Montana Water Pollution Control Act if any groundwater discharge causes pollution as just described.

NO RECOVERY IN LICHEN BIOMASS

The effect of H-W's gaseous emission on nearby lichens was discussed in the 1974 EIS. The studies showed a lower lichen biomass near the mill. Comments to the PER stated that no recovery has occurred since, which might be expected because of reductions in emission of reduced sulfur compounds. These reductions, however, have not been made recently enough to allow significant change to be observed.

ENERGY

The PER indicated a minor potential impact on energy due to the increased energy demands of more efficient air pollution control equipment. Not indicated, however, were certain demand reductions occurring from reduced lime kiln capacity and other equipment changes. The potential impact on overall energy demands, if any, would be minimal, and the continuing flux in gas supplies and supply projections makes any further analysis of questionable value.

OTHER

Several other comments related to potential impacts of the expansion are well taken if the review basis is expansion versus no expansion. This is not the case as H-W currently has a construction permit for the expansion. Most of these comments were related to current air quality levels, current emissions, the current "state-of-the-art" control technology.

COMPLIANCE WITH PERMIT CONDITIONS

Several comments requested the Department enforce the conditions of the 1974 permit. These comments indicated that commentors were unaware of the actual terms of the permit. The conditions included prohibitions against increases in total particulate emission and sulfate emission. These conditions, as all others, will be enforced. The ambient monitoring program condition has not been adhered to, by mutual agreement. This program was intended to provide 3 years of data from 3 stations - 2 years before expansion and 1 year after. Obviously, had this condition been enforced at the time, there would be no data at the conclusion of the now-delayed expansion. The state will, however, require a similar program to be operated to provide the necessary data. The company is now and will continue to conduct an emission testing and reporting program as provided for in the rules and the permit. The last condition, related to recovery furnace emission control is being accomplished through contributions by Hoerner-Waldorf to the National Council for Air and Stream Improvement.

CONDITIONS OF RENEWAL

Generally, the conditions of permit renewal are listed below. A copy of the complete permit is available from the AQB.

1. Total mill particulate emissions will not exceed 4337 lbs/day, monthly average.

2. Total mill sulfate emissions will not exceed 2286 lbs/day, monthly average.

3. Total mill reduced sulfur emissions will not exceed 723 lbs/day.

4. Total mill sulfur dioxide emissions will not exceed 5000 lbs/day.

5. Hoerner-Waldorf will conintue an emission testing and reporting program.

6. Hoerner-Waldorf will conduct an ambient air monitoring and reporting program.

7. Hoerner-Waldorf will fund a meteorological study at a cost to Hoerner-Waldorf not to exceed $50,000.

8. Hoerner-Waldorf shall submit for approval detailed equipment design data and specifications.

STATE DOCUMENTS

Department of Health and Environmental Sciences
STATE OF MONTANA HELENA, MONTANA 59601

John S. Anderson M.D.
DIRECTOR
A. C. Knight, M. D., F.C.C.P.
ACTING DIRECTOR

December 3, 1976

TO: Persons and organizations interested in the Johns-Manville Sales Corporation discharge to the West Fork Stillwater River, Montana

In July, 1976, the Water Quality Bureau of the Department of Health and Environmental Sciences, issued a tentative MPDES waste discharge permit to the J-M Corp. (Johns-Manville Sales Corporation). On August 24, 1976, a public hearing was held in Columbus, Montana to provide public input to the proposed discharge permit and to the PER (preliminary environmental review) that was prepared by the Water Quality Bureau relative to the Johns-Manville discharge. Based on comments obtained from this public hearing, a number of changes were made in the permit. The most significant changes incorporated into the final permit were:

1. A continuous bioassay in the waste effluent from the J-M Corp. will be required rather than a periodic bioassay.
2. A change in pH of 0.2 units will be allowable in the river as a result of the J-M Corp. discharge.
3. The technique for calculating safety coefficients was clarified and slightly revised to make it more understandable and more enforceable.

In addition to these changes, there were numerous minor changes to better clarify or more accurately describe permit conditions.

On October 27, 1976, a final MPDES permit was issued to the J-M Corp. for their discharge. This permit shall become effective on the date of the Department's approval of an acceptable chemical and biological testing program and the Department's approval of and the permittee's installation of facilities for a water-tight seal of the adit and a plan for sealing the adit. To date, the J-M Corp. has not submitted these documents for Department approval, but is expected to do so soon. Upon receipt of these documents from the J-M Corp., a notice will be sent to all individuals and organizations interested in this problem to solicit their review and comment. Upon approval of these procedures by the Water Quality Bureau, the J-M Corp. permit will become effective.

Copies of the final J-M permit and the PER prepared by the Bureau are available upon request from the Water Quality Bureau at a nominal cost.

Yours truly,

M. K. Botz, P.E.
Water Quality Bureau
Environmental Sciences Division

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July, 1976

STATE DOCUMENTS

PRELIMINARY ENVIRONMENTAL REVIEW

MINERAL EXPLORATION ADIT

JOHNS-MANVILLE SALES CORPORATION

WEST FORK STILLWATER RIVER

SWEET GRASS COUNTY, MONTANA

COMPILED BY: M. K. BOTZ
WATER QUALITY BUREAU
ENVIRONMENTAL SCIENCES DIVISION
DEPARTMENT OF HEALTH & ENVIRONMENTAL SCIENCES

JULY 1976

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PRELIMINARY ENVIRONMENTAL REVIEW

Mineral Exploration Adit
Johns-Manville Sales Corporation
West Fork Stillwater River
Sweet Grass County, Montana

The Johns-Manville Sales Corporation (J-M), after encountering substantial water in their exploration adit, applied on February 13, 1976 for a waste discharge permit to the Montana Department of Health and Environmental Sciences, Water Quality Bureau. The application for a permit is pursuant to Section 69-4806, R.C.M. 1947, and Rule MAC 16-2.14 (10)-S14460. The Montana Environmental Policy Act, Title 69, Chapter 65, R.C.M. 1947, requires the Department of Health and Environmental Sciences to prepare an EIS (environmental impact statement) on major actions of the Department that will significantly affect the human environment. A determination of whether the Department's decision on J-M's permit application will have such a significant impact on the human environment is to be determined through the preparation of a preliminary environmental review (PER) in accordance with rule MAC 16-2.2(2)-P2020 and -P2030. This PER constitutes the Department's analysis of the projected impact of the Department's decision to issue or deny an MPDES permit to J-M and contains a recommendation concerning the need for the preparation of an EIS. Developments leading to the J-M exploration adit are described in the U. S. District Court Memorandum and Order (Friends of the Earth, Inc. vs. Earl L. Butz, 1975),

> "JMSC has been actively exploring since 1967 for minerals of economic value in the Stillwater complex, and started staking mining claims in 1968, with exploration drilling commencing in 1969. During the winter of 1970-71, JMSC began working with the Forest Service on various aspects of this overall exploratory project. Meetings before the Forest Service and JMSC led to a set of guidelines on mineral exploration in the Custer and Gallatin National Forests, issued in April 1971. During the winter of 1970-71, the Forest Service, the United States Geological Survey, the Montana Department of Fish and Game, and the Montana Department of Health, in cooperation with JMSC and other mining companies, prepared a draft interagency proposal regarding water quality monitoring in the Stillwater complex. Further, in July 1971, JMSC, the Forest Service and the Montana Department of Fish and Game jointly adopted reclamation guidelines with respect to mining exploration in the complex."
>
> "Then, on August 28, 1974, the Forest Service issued regulations effective September 1, 1974, establishing an entirely new system for control by the Forest Service of prospecting and mining activities on national forest lands...."
>
> "Under the new regulations, the Forest Service examined JMSC's proposed prospecting activities to determine whether they would have adverse environmental consequences and approved a plan of operations."

The Montana Department of State Lands issued an exploration permit to the J-M Sales Corporation on May 3, 1972. The permit was renewed on April 28, 1976 for a one-year period.

II. DESCRIPTION OF PROPOSED ACTION

Section 69-4806 states in part: "It is unlawful to:

> (2) carry on any of the following activities without a current permit from the Department;
>
> (a) construct, modify, or operate a disposal system which discharges to any state waters;
>
> (b) construct or use any outlet for discharge of sewage, industrial waste, or other waste to state waters; or
>
> (c) discharge sewage, industrial waste, or other waste into any state waters; or..."

On January 18, 1974, the Board of Health and Environmental Sciences adopted a rule, MAC 16-2.14(10)-S14460, entitled the Montana Pollutant Discharge Elimination System (MPDES). This rule provided program elements needed by the state to administer a waste discharge permit program in the state of Montana. Section 4 of MAC 16-2.14(10)-S14460 states in part:

> (c) "The owner or operator of any proposed point source, which may discharge pollutants into state waters, shall file a completed MPDES permit application no less than 180 days prior to the day on which it is desired to commence operation of the point source..."

Johns-Manville Sales Corporation (J-M), on February 13, 1976, applied to the Department of Health and Environmental Sciences for an MPDES permit to discharge mine drainage water to the West Fork Stillwater River. The application covers only discharges which may occur during the exploration phase. The application indicates an expected discharge in the range of 60,000 gallons per day to 900,000 gallons per day. The application also states, in part: "Exploration activity with unpredictable flow - all water is naturally occurring water percolating through underground rock which was unexpectedly encountered in a dike contact zone."

The original application was determined by the Department to be incomplete. In a letter of April 22, 1976, the Department requested additional information. On May 19, 1976, "J-M" responded to the Department's request and provided the requested additional information.

The Department has information relative to the quality and quantity of the drainage from the mine adit, (Table 1). These data are from various organizations including, the Montana Department of Fish and Game, the Water Quality Bureau of the Montana Department of Health and Environmental Sciences, and the Johns-Manville Sales Corporation. It should be noted that the Department believes some data summarized on Table I is not accurate; that is, proper sample preservation techniques may not have been followed in all cases.

III. DESCRIPTION OF J-M PROJECT

The following description of the J-M project is taken from the Federal EAR (Environmental Analysis Report) written by the U. S. Forest Service (1974).

> "Johns-Manville Sales Corporation proposes to drive a 3,000-foot exploration adit at 6,500-foot elevation adjacent to the West Fork of the Stillwater River, near the center of the W½, Section 14, Township 5 South, Range 14 East (unsurveyed). The purpose of the adit is to obtain bulk samples of the ore to determine its quality and characteristics.
>
> In order to achieve this purpose, the following actions are needed:
>
> 1. Approximately 6.0 miles of the West Fork Stillwater Road will need spot stabilization and additional culverts before ore trucks can safely haul the bulk sample. Two cattle guards may require replacement with heavier duty materials.
>
> 2. A 50-foot bridge will be constructed across the West Fork of the Stillwater River.
>
> 3. A campsite location will be needed for housing the crew near the adit. Facilities will be two bunkhouse trailers, one cookhouse trailer, one office trailer, one washroom-showerhouse, vault toilets, water system, and septic system with drainfield.
>
> 4. Approximately 300 feet of new road for access to the adit portal.
>
> 5. A location, near the adit, for a 1,500 square foot building to be used as a combination compressor house, garage, repair shop, and laboratory. This building will have shower and toilet facilities plus water and septic system.
>
> 6. Area near adit portal for storage of approximately 4,000 cubic yards of rock to be mined. Approximately 1,000 yards will be ore and 3,000 yards will be waste."
>
> "Johns-Manville has been actively exploring in the Stillwater Complex for minerals of economic value since August 1967. The methods of exploration involve geologic mapping, geophysical, and diamond core drilling. This exploration work has shown a potentially economic mineralized zone. In order to properly evaluate the zone, a bulk sample of ore is needed. The proposed adit is the only logical way to secure the bulk sample."

"The Johns-Manville objective is to evaluate the mineralized zone and determine if the mineral can be economically produced."

Recent communication with the J-M Sales Corporation (Tom Micklejohn, May 13, 1976) showed that Items 1 through 5 above have been completed at the site. The following additional work items have been proposed for the site.

1. The J-M Sales Corporation proposed to extend the adit 3,000 additional feet at the 6,500 foot level in accordance with D. L. Monroe's request to George P. Schaller, District Ranger, U. S. Forest Service, by letters of 12-18-75. The U. S. Forest Service is in the process of preparation of preparation of supplemental report to EAR on this subject.

2. An area near the adit portal is needed for storage of 8,000 to 10,000 cubic yards of waste rock removed during the proposed 3,000 foot extension of the adit.

IV. IMPACT SUMMARY - PHYSICAL ENVIRONMENT

Additional exploration work by the Johns-Manville Sales Corporation on the West Fork of the Stillwater River will have an impact on the physical environment. The impacts (Figure 1) range from moderate to none. Impacts that are considered minor are water quantity and distribution (the Johns-Manville Corporation will add a small additional amount of water to the West Fork of the Stillwater River); water quality - the Johns-Manville Corporation will add water of a somewhat different chemical composition to the West Fork of the Stillwater River, but will create no measurable change in the quality of the stream and will not effect the prescribed beneficial uses of the stream. There will be a minor impact on soils and vegetation in the area resulting from the additional waste rock from the adit which will cover an additional area. Continued adit activity will impact to a minor extent the limited natural resource of a high quality outdoor area. Based on information developed by the Montana Fish and Game Department, movement of elk has been altered by the J-M activities to date. This interruption of the elk movement patterns will probably continue for the duration of the additional exploration activities.

FIGURE 1

PHYSICAL ENVIRONMENT IMPACT SUMMARY

	Major	Moderate	Minor	None	Unknown	Discussion on page
Terrestrial Life & Habitats		X				5
Water Quantity and Distribution			X			6
Water Quality				X		9
Aquatic Life and Habitats				X		12
Geology and Soils			X			14
Vegetation			X			14

	Major	Mod-erate	Minor	None	Un-known	Discussion on page
Air Quality				X		16
Historical and Archaeological				X		16
Environmental Resources			X			17

TERRESTRIAL LIFE AND HABITATS

The impact of the exploration adit on the areas wildlife was described in Montana Outdoors (1976).

> "The Johns-Manville exploration adit provided an opportunity to assess the effect of a relatively minor operation on the wildlife populations. (The adit is situated along the West Fork of the Stillwater River, upstream from the mouth of Cathedral Creek.) The FS campground at Initial Creek was used for a base camp and the road across Horseman Flats (FS Road No. 846) serviced both the adit and the camp. This road also bisects an important portion of the elk winter range. Previously, the road was closed to vehicle traffic by drifting snow, but in 1974-75, the mining company kept the road plowed throughout the winter."
>
> "The Montana Department of Fish and Game recommended the following travel restrictions: minimizing trips, restricting vehicles to established roads and limiting travel to one hour after sunrise to one hour before sunset. In addition, the FS closed the road to the general public. But these restrictions weren't closely followed."
>
> Elk extensively used Horseman Flats during the winters of 1971-74. However, in 1974-75, very few elk used the flats. Elk previously moved between Horseman Flats and the Picket Pin area during most of the winter. In late spring (April and May), a portion of the herd moved to the steep east-facing slopes of Horseman Flats above the Stillwater River. After the 1974 hunting season, most of the herd was on the Picket Pin portion of the winter range, where it stayed until late January 1975, then moved to Horseman Flats. It remained on the flats for only three or four days and then appeared on the slopes above the Stillwater River and used this area for the remainder of the winter. Elk definitely avoided the Horseman Flats area in 1974-75 -- the first year Johns-Manville kept the road open all winter."
>
> "Some observers suggested that heavier snow packs in 1974-75 caused this shift in the elk winter range patterns. However, the snow was not excessive and domestic horses wintered on the flats without supplemental feed. In fact, the shift in elk use was probably due to a combination of traffic on the road and deeper than normal snow. Elk used the timbered slopes above the road for bedding and, particularly during periods of heavy snow, crossed the road and ventured out onto the open flats for feeding. Road traffic disrupted

this pattern and probably caused elk to move elsewhere. This is supported by the fact that in June -- when snow was no longer a factor -- few elk used the flats. They remained above the road for both feeding and bedding."

"Horseman Flats is also an important elk calving ground and researchers found that fewer elk calved here in 1975 than in 1974."

"The adit also affected elk migration to the summer range. The 1974 information indicated the West Fork of the Stillwater River was a major migration route, with about 57% of the winter herd using this route. In addition, elk may have calved in the West Fork area. In 1975, researchers saw only one cow above the adit during the calving season and only 27% of the winter herd used this migration route. Most of the elk shifted to the Picket Pin Creek route. Although normal patterns were disrupted, elk bypassed the mining activity and reached their summer range...."

WATER QUANTITY AND DISTRIBUTION

The basic hydrology of the Stillwater River area has been described by Leaf and Jones (1975):

Streamflow

"Table 1 is a regional summary of the streamflow characteristics of 13 drainage basins which vary from 51.1 to 11,795 square miles in size. Runoff is generally lowest in January through March and highest in May, June, or July. Approximately 75 percent of the annual flow occurs during the snow-melt runoff season (April-July), and, as previously discussed, rainfall during peak snowmelt can produce extreme flooding. Subsequent rainfall during summer and fall does not produce significant quantities of streamflow. Figure 1, reproduced from Botz (1971), shows monthly flow characteristics of streams in the Stillwater Complex.

Farnes (1971) determined that several drainage basin characteristics in the Stillwater Complex determine streamflow. Some of these parameters are area, forest cover, mean elevation, mean annual precipitation, and soil storage index. The correlation of runoff with one of the above parameters; i.e., area is shown in Figure 2 for the streams of Table 1.

Low flows. Of particular environmental concern are the extremely low flows which routinely occur during winter. As previously discussed, flow regime is the product of climatic and physiographic factors. Watersheds in the subalpine zone of the Stillwater Complex are typically covered with coniferous forests to timberline at about 9,500 feet. Soils decrease in depth with increasing elevation, thus limiting the amount of moisture that can be stored in the soil mantle. Moderate water consumption by vegetation on shallow mountain soils coupled with the tight granitic bedrock at or very near the ground surface over most of the area precludes any significant sub-surface runoff. Moreover, the lakes, ponds, and swampy

7-14-75

Table 1.

REGIONAL STREAMFLOW ANALYSIS

Station Number[1]	Station Name	Location S	Location T	Location R	Record	Area (sq.mi.)	Max. flow / Min. flow (cfs)	Date	Peak (cfs/sq.mi.)	Average flow (cfs)	Average flow (AF)	Yrs.	Average (AF/sq.mi.)
06188000	Lamar River near Tower Falls Ranger Station	0.5 mi. upstream from mouth			1923-69	660	13600 40	5-1928 3-1925	20.6	829	600,600	46	910
06197500	Boulder River nr Contact, Mont.	23	3S	12E	1910-12 1913-16 1929 1950-69 1970-73	226	5590 4.2	6-23-71 2-1961	24.7	380	275,300	24	1218
06199000	West Fork, Boulder R. at McLeod, Mont.	16	2S	13E	1907-14	135	1990 not determined	6-3-09	14.7	-	137,000	3	1014
06200000	Boulder R. at Big Timber, Mont.	14	1N	14E	1947-53 1953-73	523	9840 10	5-28-56 8-26-61	18.8	602	436,100	24	834
06202600	Stillwater River at Nye, Mont.	31	4S	16E	1969-73	337	6390 23	6-28-70 3-2-71	19.0	-	407,950	4	1210
06204050	West Rosebud nr Roscoe, Mont.	10	7S	16E	1965-73	52.1	1470 2.5	6-28-70 4-1967	28.1	129	93,460	8	1794
06204500	Rosebud Creek nr Absarokee, Mont.	13	4S	18E	1935-69	394	5790 31	6-15-67 5-25-36	14.7	407	294,900	34	749
06205000	Stillwater River nr Absarokee	28	3S	19E	1910-14 1935-73	975	12000 58	6-15-67 4-1936	12.3	952	689,700	38	707
06205500	Clarks Fork Yellowstone R. ab Squaw Cr. nr Painter, Wyo.	34	57N	106W	1946-51	194	4920 not determined	6-22-50	25.4	420	304,100	6	1567
06206000	Clarks Fork Yellowstone R. below Crandall Cr. near Painter, Wyo.	1	56N	106W	1930-32 1950-57	446	7850 not determined	6-4-57	17.6	not determined no winter flows		-	-
06207500	Clarks Fork Yellowstone R. near Belfrey, Mont.	31	9S	22E	1921-73	1154	10900 32	5-26-28 4-26-61	9.5	944	683,900	52	593
06209500	Rock Creek nr Red Lodge Mont.	20	8S	20E	1932 1934-73	124	3110 14	6-4-57 11-1954	25.1	172	124,600	39	1005
06214500	Yellowstone River at Billings	34	1N	26E	1904-05 1928-73	11795	66100 430	6-1967 12-1932	5.6	6862	4,972,000	45	421

[1] USGS, WSP

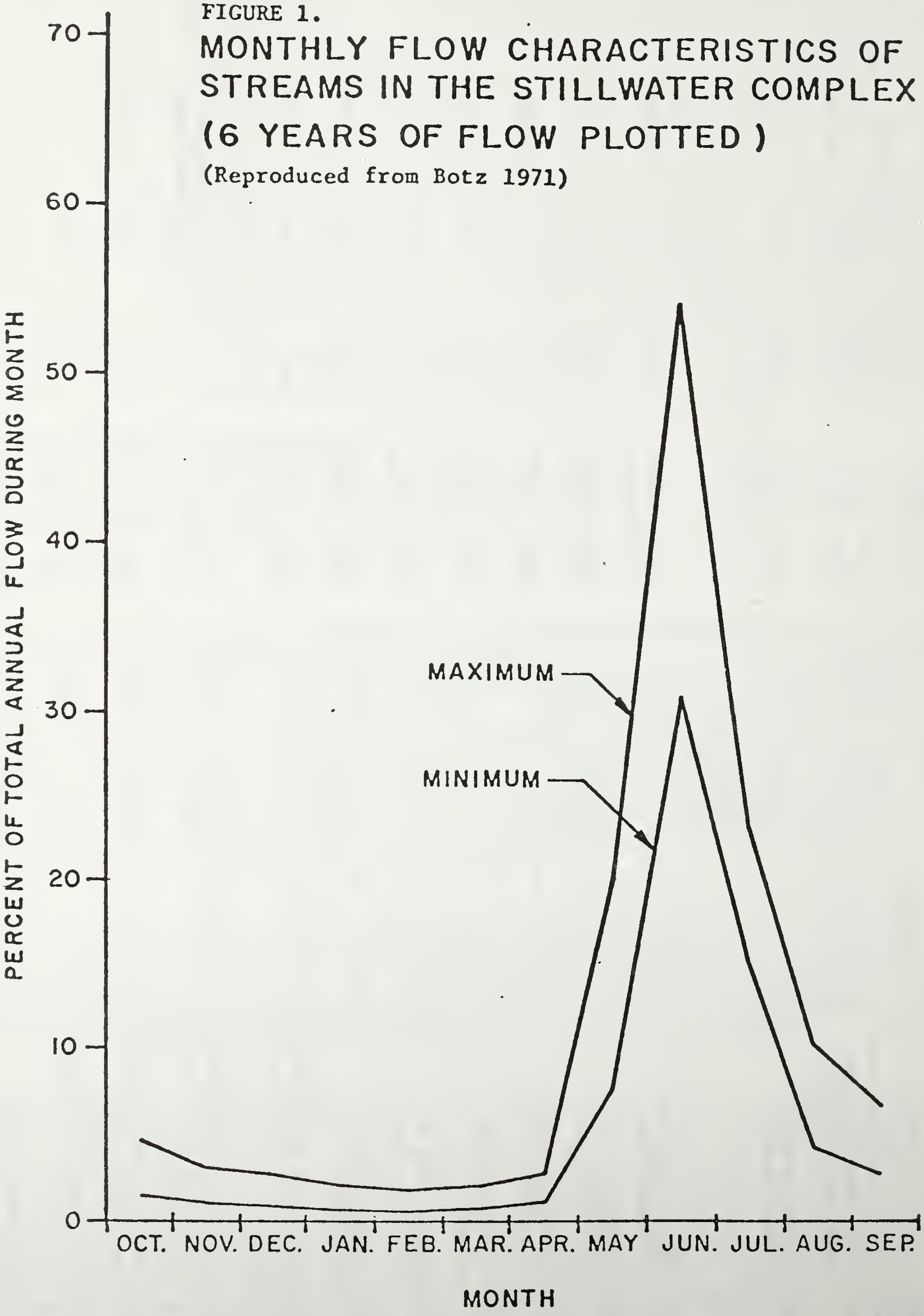

FIGURE 1.

MONTHLY FLOW CHARACTERISTICS OF STREAMS IN THE STILLWATER COMPLEX AREA. (6 YEARS OF FLOW PLOTTED)

(Reproduced from Botz 1971)

> areas, while providing some storage, are not extensive enough to regulate stream flow. The net result is flashy, sharp peaked, high intensity runoff during spring with rapid recession of flows to extremely low levels in late winter."

The only stream impacted by the J-M exploration adit is the West Fork of the Stillwater River. Hydrologic characteristics of the West Fork have been described previously. Average annual flow of the West Fork River is approximately 110 cfs (Leaf and Jones, 1975) and annual minimum flows are approximately 5 to 10 cfs during the months of November through February. The impact of the adit on the West Fork of the Stillwater River near the adit is to add water to the river. It is anticipated for the remainder of the exploration adit that water flows to the river will be less than 300 gallons per minute. The project has no other impact on water quantity in this stream.

WATER QUALITY

Chemical quality of the West Fork Stillwater River above the Johns-Manville exploratory adit, and of the adit discharge are summarized in Table 1. This table includes analyses performed between 75-1-7 and 76-3-8 by the Montana Bureau of Mines and Geology; a private laboratory in Billings, and the Montana Water Quality Bureau.

The West Fork Stillwater River has high quality water with very low concentrations of metals, nitrogen and phosphorus compounds, and relatively low concentrations of all other dissolved constituents. Biota present in the stream are acclimatized to these very low metal concentrations, thus they would be sensitive to introduced metals particularly in view of the low hardness of the stream water which makes most metals more toxic. (McKee and Wolf, 1973). The stream has little buffering capacity because of its low alkalinity; thus, introduced acids would have a large effect on the stream pH.

The stream has low concentrations of nitrogen and phosphorus compounds; thus, any increase in these compounds could cause significant increases in productivity and could conceivably cause objectionable algal growths. Objectionable growths of algae have occurred in other localities at nitrate-nitrogen concentrations of 0.31 mg/1 and total phosphorus concentrations of 0.04 mg/1 (Fast and Horpestad, 1972). Algal assays performed by the Montana Water Quality Bureau, Department of Health and Environmental Sciences, indicate algal growths may be increased three to six times at concentrations of 0.01 mg/1 phosphorus (background levels were 0.002 to 0.005 mg/1 phosphorus), but showed no increased growth at nitrogen concentrations of 0.5 mg/1 (background levels were 0.04 to 0.09 mg/1). When both nitrogen and phosphorus concentrations were increased, the growth response was proportional to the increase in phosphorus up to levels of 0.01 mg/1. Above this point, increased nitrogen caused increased growth.

Water from the adit (Table 1) contains significantly more dissolved substances and tends to slightly increase alkalinity and hardness of the stream. This water also contains small amounts of some metals.

CHEMICAL CHARACTERISTICS OF WEST FORK STILLWATER ABOVE ADIT AND OF THE ADIT DISCHARGE WATER

(all parameters in mg/l unless noted)

	Above adit					Adit discharge**					
	From 1/7/75 to 3/8/76										
	$\bar{X}$	Min.	Max.	S	N	$\bar{X}$	Min.	Max.	S	N	Date(s) of measurement
Calcium	7.6	3.6	10.1	2.4	13	53	4	13.0	40.5	11	6/21/75-1/22/76
Magnesium	3.3	1.6	4.9	1.2	13	14.73	2	39	12.3	11	
Sodium	1.5	0.9	2.0	0.4	13	40.005	25	96.4	15.12	11	
Potassium	1.0	0.6	1.2	0.2	13	1.63	0.5	3.3	0.85	11	
Iron						0.08	<0.01	0.36	0.09	16*	1/26/76-4/12/76
Manganese						0.08	0.07	0.11	0.02	11	
Silicon dioxide	6.7	4.1	8.6	1.3	13	10.30	8.3	14.3	3.46	11	
Bicarbonate	35.1	23	48	9.6	13	134.49	65	171	37.80	11	
Carbonate											
Chloride	0.7	0	1.8	0.5	13	8.24	2	28	7.64	11	
Sulfate	6.73	3.4	10	2.4	13	53.01	22	71	28.20	11	
Fluorine											
Nitrate-nitrogen	0.10	0.04	0.27	0.067	12	13.35	0.23	71	20.76	25	2/18/75-4/12/76
Nitrate-nitrite-nitrogen	0.08	0.06	0.09	0.014	5	6.21	0.19	20	8.12	5	1/28/76-2/20/76
Phosphate-phosphorus	0.0026	0.002	0.003	0.0005	5	0.004	0.002	0.006	0.002	4	2/7/76-2/20/76
Total Phosphorus	0.0032	0.002	0.006	0.0016	5	0.0088	0.002	0.020	0.008	4	2/7/76-2/20/76
Totol Kjeldahl Nitrogen	0.09	<0.005	0.30	0.113	5	4.39	0.10	16	6.6	5	1/28/76-2/20/76
Ammonium nitrogen	0.01	0.002	0.04	0.02	5	26.92	0.08	82	28	5	1/28/76-2/20/76
Cadmium			<0.01		10*						
Copper			<0.01		10*	0.02	<0.02	0.05	0.017	16*	1/26/76
Nickel			<0.01		10*	0.003	<0.05	0.05	0.013	16*	
Zinc			<0.01		10*						4/12/76
Total recoverable aluminum	0.08	<0.05	0.30	0.1	7	0.22	<0.5	0.48	0.16	16*	
Lab pH											
Total dissolved solids	58.1	37.7	78.6	15.9	12						
Specific conductance (µmhos)	71.1	35.2	97.4	22.1	12						
Total hardness	31.7	15	44	10.6	12						
Total alkalinity as $CaCO_3$	28.6	19	38	8.0	12						

$\bar{X}$ = arithmetic mean
N = number of analyses

S = standard deviation
* = form not specified
** = more analyses have been made, but results are not included here.

This water also contained significant amounts of nitrogen (probably derived from blasting compounds) when exploration was occurring. A mixture of ammonium nitrate and diesel fuel was being used for blasting until shortly before work stopped. When this mixture is wetted, it rapidly dissolves and releases both ammonia and nitrate. Nitrogen enters the water both from spilled powder and from blasting residue. Just before blasting stopped, Iremite (product of Ireco Chemicals Company) was used for blasting. This compound should release significantly less nitrogen to the discharge water.

Since exploration has stopped, the nitrate levels in the discharge water have been dropping and have reached levels only slightly above background levels by May 1976 (minimum value in Table I).

If the conditions of the J-M waste discharge permit are met, there should be no measurable change in aquatic organisms in the West Fork Stillwater River and no effect on prescribed beneficial uses of water from the stream. The J-M discharge may cause small increases in the load of some dissolved constituents in the West Fork of the Stillwater River. At extremely low river flows, some of the increases in dissolved minerals may be measurable, but at normal flows, there will be no measurable change in dissolved constiuents in the stream.

If conditions of the J-M waste discharge permit are met, water quality of the West Fork of the Stillwater River will be maintained at its present high quality.

There are two other potential impacts from the planned adit development. These are the possibility of encountering toxic water in the adit and the possible development of a long-term acid mine drainage problem.

The Stillwater Complex has unique geological and mineralogical characteristics (Fuchs and Rose, 1974 and Cabri and LaFlamme, 1974). Water in contact with minerals in the complex has entered streams for ages both from surface runoff and groundwater flow. No problems of toxicity from these inflows are known. Exposure of some minerals, particularly sulfide minerals, by mining can cause formation of acid waters due to the reaction of air with water and certain minerals. This reaction is well understood for some sulfide minerals, but it has not been investigated for many other minerals. Acid mine waters are a problem in many parts of the U. S. and in Montana. The problem lasts virtually indefinitely and typically is very difficult to economically control. Many miles of stream in Montana are severely damaged by acid waters from old coal and hardrock mines.

A theoretical approach to predicting the possibility of acid mine water formation involves mineral stability diagrams and dissolution kinetics. This approach is very difficult due to lack of knowledge of stability and kinetics of many minerals.

Another approach to this problem is to examine waters from other mines in similar geological conditions and determine the quality of water in or flowing from the mine. There are no known mines in the Stillwater Complex in the same stratigraphic horizon as the J-M adit. The mine most similar to the J-M adit is the inactive chrome mine near Mouat, Montana. No problems of acid mine water are known from this mine.

Although it cannot be substantiated with a rigorous technical proof, it appears that there is a very low probability of producing acid mine water from the additional J-M adit work. The proposed waste discharge permit includes a provision for sealing the adit in the event bad waters are encountered or are created in the adit. Sealing the mine would prevent formation and discharge of acid waters.

Another concern at the J-M adit is the possibility of encountering toxic waters. The possible presence of a natural "body" of underground water containing toxic concentrations of some element or combination of elements cannot be ignored. Several lines of reasoning, however, suggest this is very improbable. No known natural underground toxic waters are known in the area. Water encountered in the adit is part of a natural regional groundwater system and has entered streams and springs in the area for hundreds or thousands of years. No toxic water problems are known in the Stillwater Complex. The presence of naturally "toxic" groundwater is not unique, but is rare. General geochemistry and climatic conditions associated with the Stillwter Complex are basically not conducive to formation of toxic waters.

Water encountered in the adit will be monitored using bioassays before release to the groundwater system. The technique of drilling test holes in advance of the adit face will allow testing of waters before they are encountered by the adit. Water zones containing toxic waters can be grouted and sealed off from the adit before the adit is advanced into the water-bearing zone. The probability of encountering toxic waters is very low, but the contingency of a water-tight seal for the mine would prevent damage to the river if no other water control or treatment is possible. Compliance with discharge permit conditions and available water control and testing technology will avoid adverse impacts of toxic waters.

AQUATIC LIFE AND HABITATS

The West Fork of the Stillwater River is a high quality mountain stream characterized by steep gradients and a bottom composed of rubble and boulders. As the West Fork approaches the Stillwater River, the character of the stream is changed to some extent by a decreased gradient and the entry of Castle Creek which is a large, warm tributary that enters the West Fork approximately three miles upstream from the mouth. Hydrologic characteristics of the West Fork of the Stillwater (described in a previous section) is that of a high mountain stream with a short period of high flow during the spring runoff period and a relatively stable base flow during the remainder of the year.

Only three fish species are present in the West Fork. These are rainbow trout, brown trout, and mountain whitefish. Whitefish are found in small numbers only in the lower five or six miles of the West Fork, and they apparently do not reproduce to any extent in the West Fork. Brown trout occur in the West Fork from the mouth to a point approximately one-half mile below the adit. The Brown trout standing crop is moderately high downstream of Castle Creek, and decreases upstream.

Brown trout spawn in shallow areas in November with eggs hatching the following spring. The fry leave the gravel environment and move into shallow, slow pools at the stream margins. The older fish utilize faster waters and are especially dependent on undercut banks, deep pools, and pockets behind boulders. Growth rates are moderate downstream of Castle Creek and slow at upstream locations.

Rainbow trout are present in the West Fork from the mouth to at least several miles upstream from the adit. Near the adit and upstream for at least five miles, it is the only fish species present. The standing crop is moderately high in the lower few miles of the West Fork and decreases upstream. Growth rates are moderate below Castle Creek and quite slow at upstream locations, where fish reach total lengths of only two inches after the first summer's growth. At least four to five years are required to produce a fish of 10 inches total length. Rainbow spawn in spring, hatch in July, and swim actively later in the summer. Both brown and rainbow trout species are sedentary in the West Fork and they do not appear to move any great distances.

Stream bottom communities are dominated by aquatic insect nymphs and larvae. The orders Plecoptera (stoneflies), Tricoptera (caddis flies) and Ephemeroptera (mayflies) are the most abundant organisms. Small aquatic annelid worms also are present in significant numbers. These worms are increasingly abundant in a downstream direction. Aquatic insects present are largely fast water organisms living on undersides and margins of gravel, rubble, and boulders. The orders Plecoptera, Tricoptera and Ephemeroptera are considered clean water forms and they are sensitive to most pollutants. Aquatic invertebrates are nourished largely by algae and terrestrial detritus.

There are few vascular plants in the West Fork Stillwater River. The bulk of the aquatic plant communities consist of incrusting microscopic and filamentous algae. These are largely fast-water forms growing on gravel, rubble and boulders.

Potential contaminants from the J-M adit in the West Fork Stillwater River include ammonia, nutrients (nitrogen and phosphorus), and toxic metals. Acute toxicity of ammonia to fish and aquatic insects can occur at levels as low as 0.2 to 0.3 mg/l. Concentrations of some metals can be dangerous to fish at levels as low as a few micrograms per liter (ug/l). Even small additions of these substances to the West Fork could cause acute or chronic toxicity problems. Addition of nutrients to the West Fork of the Stillwater probably would not result in a problem of toxicity; however, additional nutrients may alter the abundance and composition of aquatic organisms in the stream.

No measurable impact is expected on stream organisms, including fish, if the J-M discharge meets Water Quality Bureau permit conditions.

GEOLOGY AND SOILS

The Stillwater Complex contains one of the world's richest collections of minerals - chrome, copper, nickel, platinum, palladium, silver, gold and iron. Geologically, the area is a Precambrian layered basic and ultrabasic complex (2.7 to 3.2 billion years old), according to information from the Johns-Manville Corporation.

The complex is exposed along the northeast front of the Beartooth Mountains, and dips steeply to the north and strikes east-southeast for a length of 28 miles and a width of 4.5 miles. It is bordered on the south by a large highland area of ancient Precambrian metasediments (3.2 billion years old) and a young intrusion of granite (1.55 billion years old). The northern contact of the complex is covered unconformably by Cambrian sediments which completely mask the upper sequences of the complex. The effects of repeated tectonic movements are shown by multiple cross faulting toward basal section, while later Laramide mountain building has given rise to considerable uplift, with associated strike and thrust faulting.

In terms of soils, the Forest Service has classified soil near the adit as being in the Rock Outcrop Ecosystem. The adit is at the base of a massive rock outcrop. The road leading to the adit and the pad at the adit protal are in the Douglas fir ecosystem.

The Rock Outcrop Ecosystem is characterized as having soils which are well-drained, shallow, dark in color and gravelly. They occur on high plateaus and steep precipitous barren rock canyons. Soils of the Douglas Fir Ecosystem generally are medium in depth, and contain less rock in the surface horizons. They have a thick organic mat on the surface and are deeper and have a better developed surface horizon than soils in the Rock Outcrop Ecosystem.

Impact of the addition exploration planned by J-M will be to increase the size of the waste dump, which will impact the soil system by adding a thicker layer of waste rock and the area of the dump may be increased. Reclamation requirements of the Montana Department of State Lands are normally for grading, shaping and grassing of waste dump areas. (Personal communication, W. Criswell, State Land Department, May 18, 1976). The U. S. Forest Service, however, has primary land management responsibility and they will require the waste dump to be "shaped and blended in." No trees or grass are required. (Personal communication B. LaMoure, Custer National Forest, Billings, May 27, 1976).

VEGETATION

The Forest Service has described the vegetation around the adit as being the type associated with the Rock Outcrop ecosystem, while vegetation along the road leading to the adit has been classified as being in the Douglas Fir Ecosystem.

Rock Outcrop Ecosystem:

Tree species and understory vegetation in these pockets of soil are similar to those of the Douglas-Fir, Lodgepole Pine or Subalpine Forest Ecosystems.

Characteristic Vegetation

Douglas Fir	Pseudotsuga menziessii
Lodgepole Pine	Pinus contorta
Limber Pine	Pinus flexilis
Indian Rice Grass	Oryzopsis hymenoides
Pine Bluegrass	Poa scabrella
Bluebunch Wheatgrass	Agropyron spicatum
Skunkbrush Sumac	Rhus trilobata
Rubber Rabbitbrush	Chrysothamnus nauseosus
Holboell Rockcress	Arabis holboellii
Granite Gilia	Leptodactylon pungens

Associated Species

Alpine Fir	Abies lasiocarpa
Erigonum	Erigonum chrysops
Alpine Sandwort	Arenaria obtusiloba
Skunk Polemonium	Polemoneum viscosum
Yellowstone Draba	Draba incerta
Lance-leaf Stonecrop	Sedium lanceolata
Gooseberry-leaved Allumroot	Heuchera grossulariifolia
Yellowdot Saxifrage	Saxifraga bronchialis
Cymopterus	Cymopterus bipinnatus
Rockvine Penstemon	Penstemon elliptiucus

The species of low vegetation found in this ecosystem varies with the elevational differences. The exposure also plays a part in limiting the type of vegetation found. The lower south facing slopes become exceedingly dry and hot during the summer months.

Douglas Fir Ecosystem:

Characteristic overstory vegetation is Douglas Fir if plant succession is near climax. However, this ecosystem may support dense stands of lodgepole pine following fires. The understory may vary with regard to stage of succession and with difference in site. For example, nine-bark is more prevalent on moist sites and at lower elevations. It may be confined to northern slopes because of moisture requirements. (Daubenmire and Daubenmire, 1968). Although ninebark, snowberry, and huckleberry are the usual dominant species in the understory, the understory may also consist of pine grass, barberry, spiraea or other type variations.

Characteristic Vegetation

Douglas Fir	Pseudotsuga menziesii
Ninebark	Physocarpus malvaceus
Snowberry	Symphoricarpos alba
Heartleaf Arnica	Arnica cordifolia
Pine Grass	Calamagrostis rubescens
Thinleaved Huckleberry	Vaccinium scoparium
Low Red Huckleberry	Vaccinium scoparium
Spiraea	Spiraea betulifolia
Barberry	Berberis repens
Elk Sedge	Carex - geyeri
Kinnikinnick	Arctostaphylos uva-ursi

Associated Species

Pipsissewa	Chimaphila umbellata
Rose	Rose woodsii
Dogtooth Lily	Erythronium grandiflorum
Woodland Strawberry	Fragaria virginiana
Lupine	Lupinus sericeus
Arrowleaf Balsamroot	Balsamorrhiza sagittata
Shepherida	Sheperdia canadensis
Bluebunch Wheatgrass	Agropyron spicatum

Impacts of additional work in the J-M adit will be to cover a small additional area with rock wastes.

AIR QUALITY:

Limited air quality data has been gathered in West Fork and Stillwater River valleys during the last year, according to the Air Quality Bureau, Department of Health and Environmental Sciences. Four weather instruments have been operational since last fall and a fifth was installed in May. Fluoride and high volume sampling is now in progress. Vegetation samples have been gathered, but analysis for trace elements will not be done for several months.

Preliminary data indicates that:

1. Oxidant and carbon monoxide concentrations in the ambient air were not detectable using Mast and Ecolyzer instruments.

2. Sulfur oxide concentrations are very low (.3 mg/m^3).

3. Suspended particulate matter concentrations at the Keith E. Martin residence near Nye are about 17 mg/m^3. Data from other stations are not presently available.

HISTORICAL AND ARCHAEOLOGICAL:

Granting the permit would not impact historical or archaeological sites.

According to Lahren (1975) and the Montana Department of Fish and Game (1975), there are no known historical or archaeological sites near the adit or the base camp. Lahren did identify some primitive campsites in the western and southwestern portions of Horseman Flats, but granting a discharge permit will not effect these sites.

ENVIRONMENTAL RESOURCES

Additional exploration activity at the J-M adit will have no known additional impact on unique, endangered, fragile environmental resources in the area. The West Fork of the Stillwater River is an exceptional area and is accessible by road. Such undisturbed, high quality outdoor areas are available in limited quantities in the United States. In Montana, however, there are a number of such areas available to the public, but high quality wilderness-forest environments with high quality streams are a limited environmental resource that will sustain an additional impact from the continued exploration of the J-M Corporation.

V. IMPACT ON HUMAN ENVIRONMENT

IMPACT SUMMARY - HUMAN ENVIRONMENT

Granting of the waste discharge permit to the J-M Corporation may allow continued exploration at the adit. Impacts of this continued exploration activity (Figure 2) indicate that impacts on the human environment are minor and are associated with quantity and distribution of community and personal income, quantity and distribution of employment and industrial and commercial activity. These impacts all relate to the employment of workers at the job site if the exploration activity is continued. There will be a demand for energy if the exploration is continued and there will be a minor impact on transportation networks and traffic flows due to the increased traffic associated with continued adit development. Continuation of the exploration adit also will impact the aesthetics of the area as an additional 8,000-10,000 cubic yards of rock will be placed on the waste dump. The waste dump will be more visible than is the existing waste dump. A description of each of these impacts is included in this Preliminary Environmental Review.

SOCIAL STRUCTURES AND MORES AND CULTURAL UNIQUENESS AND DIVERSITY:

The upper Stillwater River Valley is a rural, agrarian community which embraces many traditional values of country living -- close neighborly ties, concern for character of the land and a sense of community pride. Outdoor enthusiasts frequent the area during summer and fall, but generally the area has not been significantly impacted by outside interests since the federal government subsidized chrome mining during World War II and the Korean War. This mining ended in the early 1960's. Johns-Manville's exploratory adit is the first serious mining effort in 15 years. The presence of the activity has prompted local people to band together in an attempt to retain the present life style and character of the land.

FIGURE 2

HUMAN ENVIRONMENTAL IMPACT - SUMMARY

	Major	Moderate	Minor	None	Unknown	Discussion on page
Social structures and mores				X		17
Cultural Uniqueness and diversity				X		17
Local and state tax base and tax revenue				X		19
Agricultural or industrial production				X		19
Human health				X		19
Quantity and distribution of community & personal income			X			19
Access to and quality of recreational and wilderness activities				X		20
Quantity and distribution of employment			X			20
Distribution and density of population and housing				X		20
Demands for government services				X		20
Industrial and commercial activity			X			20
Demands for energy			X			21
Locally adopted environmental plans and goals				X		21
Transportation networks and traffic flows			X			21
Aesthetics			X			21

If the state grants a water discharge permit to J-M there should be little change in the social/cultural situation. The first major social/cultural impact occurred when full scale exploration began December 18, 1974, and the second will occur if J-M decides to develop a mine and mill in the area.

According to a J-M official, (Tom Meiklejohn, personnel communication May 14, 1976) when exploration resumes the size of the work force, 17 persons, will not increase. Meiklejohn further stated that members of the previous crew were all from Montana and five persons live in local towns. The fact the men were Montanans, and that some live in the community, lessened the social/cultural differences which could occur if the men were from other parts of the United States. If exploration resumes, the geographic origin of workers may or may not be the same as the previous work force.

LOCAL AND STATE TAX BASE AND TAX REVENUES:

Since the operation will employ the same number of men when exploration resumes as it did when work stopped, the continuation of wages for workers will provide additional tax revenue. According to J-M (Tom Meiklejohn, personnel communication May 19, 1976) the extension would not result in an increase of personnel or equipment. An official in the Sweetgrass County Auditor's Office said J-M is being taxed for land, equipment and nine trailer homes.

AGRICULTURAL OR INDUSTRIAL PRODUCTION:

The exploration site is on federal land which is administered by the Forest Service. The land is mountainous, heavily forested and generally undesirable for agricultural pursuits. Granting a water discharge permit would not interfere with agricultural or industrial production.

HUMAN HEALTH:

If all conditions of the permit are met, there should be no impact to human health.

QUANTITY AND DISTRIBUTION OF COMMUNITY AND PERSONAL INCOME:

The communities of Nye and Absarokee and the City of Billings benefit economically from the exploratory work. J-M workers who live in Nye and Absarokee add to the economic well being of their communities by paying taxes and purchasing goods and services. Their fellow workers, although not permanent residents, also benefit local economies by buying goods and services.

According to J-M (Tom Meiklejohn, personnel communication, May 19, 1976) weekly payroll for persons working on the project is $7,000. In addition to salaries, J-M buys groceries for the persons living at the site and fuel for equipment in Absarokee. However, in the case of the fuel, J-M owns a gasoline station in Absarokee, so the economic benefits are realized by the bulk dealership the company deals with, and not by local businesses.

J-M touches other markets in Montana by employing Montanans from other parts of the state and by buying much of its mine equipment from businesses in Billings. When exploration ceased in February, the economic benefits ceased. However, if the permit is issued and work resumes, the economic benefits will resume.

ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:

A variety of recreational activities occur in the area near the adit. In addition to hunting and fishing, the area serves as a trailhead for persons hiking into the Beartooth Primitive Area. If the conditions of the permit are met, there should be no impact on the quality of recreational activities.

The activity around the adit and campsites lessens the chance of wildlife living or passing near the area which may alter hunting and wildlife observation. The corporation's interest in maintaining the road might benefit hikers and campers. An improved road means better access, which can result in an increase in the number of persons using the forest trails.

The trailhead is near the adit. The activity around the adit is not aesthetically pleasing, and possibly offends some persons. Yet, the adit site is screened from the trail and evidence of exploration -- visual or audible -- decreases as one proceeds up the trail.

QUANTITY AND DISTRIBUTION OF EMPLOYMENT:

In terms of local employment, only five persons from the area are working on the project, thus resuming work will have a minor impact on local employment.

DISTRIBUTION AND DENSITY OF POPULATION AND HOUSING:

Since J-M houses persons working away from home and the company does not plan to increase the size of the work force, there is no impact on population or housing.

DEMANDS FOR GOVERNMENT SERVICES:

There should be no demand for government services if the permit is approved. Persons from outside the community do not require local government services, and those who work for J-M and live in the area are paying taxes.

INDUSTRIAL AND COMMERCIAL ACTIVITY:

Refer to discussion of Quantity and Distribution of Community and Personal Income.

DEMANDS FOR ENERGY:

The energy demands for the project are minor. According to Meiklejohn, fuel needs for generators and compressors average about 250 gallons a day. There are no other sources of energy available at the site.

LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:

If conditions of the waste discharge permit are met there should be no alteration of local plans and goals. The Summary and Social/Cultural Impact Sections discuss these considerations. There are four local planning groups concerned with J-M's exploration and possible development. The groups are the Sweetgrass County Planning Board, Stillwater County Planning Board, Stillwater Protective Association and the Tri-County Planning Association, composed of persons from Sweetgrass, Stillwater and Carbon counties.

TRANSPORTATION NETWORKS AND TRAFFIC FLOWS:

The road to the exploration site is an unimproved gravel road. It begins at the Mouat Mine and winds more than 1,000 feet up a slope to Horseman Flats. It then heads west, descending from the flats into the West Fork Stillwater River Valley. It proceeds south past an open area in the bottom land where the J-M trailers are parked. It then winds its way up the valley. Not far from the J-M camp a newly constructed bridge crosses the river, providing access to the adit site, on the west side of the river. On the east side of the river, near the bridge there is a parking lot for the public vehicles.

Prior to shutting down operations, inert rock from the adit was screened and used to surface portions of the road. If the permit is issued, and exploration resumes, the surfacing will continue. The use of the rock on roads benefits J-M's access to the site, and makes it easier for recreationalists to drive to the Forest Service trailhead. If the permit is granted, there should be a moderate improvement to the road due to the surfacing operation.

AESTHETICS

Further adit exploration will cause additional activity in the mine area and at the mining camp in the nearby Initial Creek campground. Many recreationists will find the presence of people, vehicles and mining facilities to be aesthetically unpleasing, as it may be thought to detract from the outdoor experience. The additional 8,000 to 10,000 cubic yards of waste rock that will be placed on the dump will create a larger waste pile. This pile will be more visible from the trail head than is the present waste dump. Many people would consider the additional waste dump to be aesthetically displeasing. The waste dump, however, rapidly recedes from view as one proceeds up the trail.

VI. NEED FOR AN EIS

A major objective of the PER (Preliminary Environmental Review) is to determine whether the proposed action of the Department will have a significant impact on the human and/or physical environment. In accordance with the rule, MAC 16-2.2(2)-P2020, "If the PER shows a potential significant effect on the human environment, an EIS shall be prepared on that action". This rule further states that the following are actions which normally require preparation of an EIS;

a) the action may significantly affect environmental attributes recognized as being endangered, fragile, or in severely short supply;

b) the action may either significantly affect growth inducing or inhibiting; or

c) the action may substantially alter environmental conditions in terms of quality or availability.

In the case of Friends of the Earth, Inc., vs. Earl Butz (1975) the necessity for an Environmental Impact Statement was in question. This case involved a decision by the U. S. Forest Service not to prepare an environmental impact statement on the exploration permit granted to J-M. The case is on appeal to the Ninth Circuit Court of Appeals. Judge Battin's opinion described why it is not possible to prepare an environmental impact statement during the exploratory states of development. Based on this case and in examination of facts in the present J-M situation, there appears to be insufficient legal grounds to require the preparation of an EIS.

Impacts of the additional 3,000 feet of adit exploration on the physical environment and on the human environment is described and summarized in Sections III and IV. Although the continuation of the adit does have an impact on both the physical and human environment, it is the opinion of the Water Quality Bureau, that the impact does not constitute a significant impact.

It can be argued that the entire exploration activity of the Johns-Manville Sales Corporation on the West Fork of the Stillwater River does have a significant impact on the physical and/or human environment. This PER, however, addresses only additional impacts created by additional exploration activity at the adit. The impact of the initial adit development, although of significant interest, is not the focus of this PER and impacts from this initial development have already occurred. Only impacts that will be caused by the additional development are under consideration in this statement. This constraint in the scope of this PER is an important factor in consideration of the need for an EIS.

Based on the impact on the physical environment, the impact on the human environment and in consideration of the rules of the State, it is the opinion of the Water Quality Bureau that an EIS is not needed for the additional exploration activity planned by the Johns-Manville Sales Corporation on the West Fork of the Stillwater River.

VII. ACKNOWLEDGEMENTS FOR PREPARATION OF PER

A number of persons were involved in preparation of this PER. All sections of the PER were prepared by the Water Quality Bureau except for the following. The section on Aquatic Life and Habitats was prepared by Phil Stuart, Montana Fish and Game Department; Soils and Geology, Vegetation, and Historical and Archaeological Section by Tom Ellerhoff, Department of Health and Environmental Sciences; and Air Quality by the Air Quality Bureau, Department of Health and Environmental Sciences. The section on Impact on Human Environment was written by Tom Ellerhoff, Department of Health and Environmental Sciences. Mr. Steve Brown, Legal Division, Department of Health and Environmental Sciences, provided assistance in preparation of the Introduction and the Need for Environmental Impact Statement. Many sections include material from another source. Such sources have been referenced.

The following agencies and groups were contacted concerning the PER:

Montana Department of Fish and Game, Helena and Columbus
Montana Department of State Lands, Helena
Montana Bureau of Mines and Geology, Butte
Chemistry Department, Montana College of Mineral Science
    and Technology, Butte
Sweetgrass County Auditor's Office, Big Timber
Bob Noe, Stillwater County Planning Board, Columbus
U. S. Forest Service, Custer National Forest, Billings
U. S. Geological Survey, Helena
U. S. Environmental Protection Agency, Denver, Colorado
Johns-Manville Sales Corporation, Denver, Colorado
The Anaconda Company, Butte, Montana
Cementation, Inc., Tuscon, Arizona
U. S. Bureau of Reclamation, Denver, Colorado
U. S. Environmental Protection Agency, Cincinnati, Ohio
Soil Technology, Raymond International, Cherry Hill, New Jersey
Michigan Department of Natural Resources, Lansing, Michigan

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Oct. 19, '76

STATE DOCUMENTS OCT 20 1976

Department of Health and Environmental Sciences
STATE OF MONTANA HELENA, MONTANA 59601

John S. Anderson M.D.
DIRECTOR

Air Quality Bureau
Cogswell Building
(406) 449-3454

October 19, 1976

Re: Hoerner-Waldorf Preliminary Environmental
Review
Missoula County

Honorable Thomas Judge, Governor, State of Montana, Helena, 59601
Montana State Library, 930 East Lyndale, Helena, Montana, 59601
Missoula Public Library, Missoula, Montana, 59801
University of Montana Library, University of Montana, Missoula, Montana, 59801
Ron Erickson, Chairman, Concerned Citizens for a Quality Environment,
Pattee Canyon, Route 5, Missoula, Montana, 59801
Hoerner-Waldorf Corporation, Missoula, Montana, 59801
Don Schwenessen, The Missoulian, Missoula, Montana, 59801
Missoula Area Chamber of Commerce, 207 East Main Street, Missoula, Montana, 59801
Maxine Johnson, Economics Department, University of Montana, Missoula, Montana, 59801
Thomas M. Power, Route 2, Bass Creek, Stevensville, Montana, 59870
Dr. Clancy Gordon, Botany Department, University of Montana, Missoula, Montana, 59801
Richard Konizeski, School of Forestry, University of Montana, Missoula, MT, 59801
Don Aldrich, Montana Wildlife Federation, 410 Woodworth Avenue, Missoula, MT, 59801
Doris Milner, Route 1, Box 1410, Hamilton, MT, 59840
Bill Kendall, Trout Unlimited, 715 Beverly Street, Missoula, MT, 59801
City-County Health Department, Courthouse Annex, Missoula, MT, 59801
City-County Planning Office, 201 W. Spruce, Missoula, MT, 59801
Student Environmental Research Center, Venture Center, University of Montana,
Missoula, MT, 59801
James Posewitz, Administrator, Environmental and Information Division,
Department of Fish and Game, Mitchell Building, Helena, MT, 59601
Department of Conservation and Natural Resources, 32 S. Ewing, Helena, MT, 59601
Department of State Lands, Capitol Building, Helena, MT, 59601
Division of Planning and Economic Development, Capitol Building, Helena, MT, 59601
Region 1, U. S. Forest Service, Missoula, MT, 59801
Fern Hart, League of Women Voters, 16 Carriage Way, Missoula, MT, 59801
Inland Forest Resources Council, Howard McDowell, 612 Savings Center Building,
Missoula, MT, 59801
Montana Wood Products Association, 612 Savings Center Building, Missoula, MT, 59801
Lester Tschannen, Big Sky West, 2717 Valley View, Missoula, MT, 59801
G. L. Owen, 7001 Bitterroot Road, Missoula, MT, 59801
Associated Press, 317 Allen, Helena, MT, 59601
United Press International, Helena, MT, 59601
John W. Bartlett, 2214 Winne, Helena, MT, 59601
Leonard W. Eckel, 1727 11th Avenue, Helena, MT, 59601
John F. McGregor, M.D., Rm. 301, Gt. Falls Nat'l Bank, Great Falls, MT, 59401
John A. Newman, M.D., P.O. Box 3493, Butte, MT, 59701
Mrs. Rita Sheehy, 1041 Poly Drive, Billings, MT, 59102
Charles R. Shields, 1755 W. Central Avenue, Missoula, MT, 59801
William A. Spoja, Jr., Box 882, Lewistown, MT, 59457

A. C. Knight, M.D., Acting Director, Montana Department of Health and Environmental Sciences, Cogswell Building, Helena, MT, 59601
Richard Dightman, 1822 Winne Avenue, Helena, MT, 59601
Walter Everly, P.O. Box 603, Butte, MT, 59701
Bruce A. Allison, M.D., 502 Second Avenue East, Kalispell, MT, 59901
Lewis J. D. Maxson, 1726 Sherwood, Missoula, MT, 59801
Frank Popiel, 1212 South Second, Hamilton, MT, 59840
Conrad O. Orr, D.V.M., 3701 Highway 93 South, Missoula, MT, 59801
Paul Kleffner East Helena, MT, 59635
John H. Crowley, City-County Planner, County Courthouse, Missoula, MT, 59801
Clifford L. Smith, Box 318, Cut Bank, MT, 59427
Water Quality Bureau, Montana Department of Health and Environmental Sciences, 555 Fuller Avenue, Helena, MT, 59601
James Goetz, 522 W. Main, Bozeman, MT, 59715
Missoula City County Air Pollution Control Board, 301 Alder, Missoula, MT, 59801

Ladies & Gentlemen:

The enclosed Preliminary Environmental Review (PER) has been prepared by the Air Quality Bureau of the Department of Health and Environmental Sciences and is being circulated for public comment. If you have any comments on the PER, please submit them to the Air Quality Bureau within 15 days (November 4, 1976). Comments are to be substantive and specific, pertaining to the potential impacts of renewal of Hoerner-Waldorf's construction permit as indicated in the PER, and are to be submitted in writing. At the conclusion of the comment period, the Department will make a final decision on preparation of an environmental impact statement based on the preliminary determination and comments submitted as above.

The following changes in the expansion program as approved in December 1974 have been noted:

1. A decrease in total lime kiln capacity after expansion from 536 TPD as proposed in the original permit application to 450 TPD in the renewal application.

2. The addition of a lime mud oxidation system to reduce total reduced sulfur (TRS) emissions from lime kiln 1, 2 and 3.

3. The construction of a new 400 TPD recovery boiler (#5) instead of repair and modification of an existing 375 TPD unit (#2).

4. Increasing the particulate removal efficiency of the electrostatic precipitator on #3 recovery boiler.

5. The possible increase in effluent discharge volume from 21.6 mgd to 25.3 mgd.

6. A reduction in wire width of the new paper machine.

7. An increase in the amount of "5D" wood and corresponding decrease in usage of residual chips.

If you have any questions, contact the Air Quality Bureau at the above address and phone number.

Sincerely,

MD Roach

Michael D. Roach, Chief
Air Quality Bureau

MDR:JNB:jms

Enclosure

cc: Ben Wake
Legal Division

PRELIMINARY ENVIRONMENTAL REVIEW

Department of Health and Environmental Sciences

Division/Bureau Environmental Sciences Division, Air Quality Bureau

Project or Application Permit Renewal - Hoerner-Waldorf

Description of Project Pulp mill expansion, construction permit renewal application, reviewed against permit approval of December, 1974, for significant changes

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Terrestrial and aquatic life and habitats				X		
2. Water quality, quantity and distribution			X			X
3. Geology and soil quality, stability and moisture				X		
4. Vegetation cover, quantity and quality				X		
5. Aesthetics			X			X
6. Air quality				X		X
7. Unique, endangered, fragile, or limited environmental resources				X		
8. Demands on environmental resources of land, water, air and energy			X			X
. Historical and archaeological sites				X		

POTENTIAL IMPACTS ON HUMAN ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Social structures and mores				X		
2. Cultural uniqueness and diversity				X		
3. Local and state tax base and tax revenue			X			X
4. Agricultural or industrial production				X		
5. Human health				X		
6. Quantity and distribution of community and personal income				X		
7. Access to and quality of recreational and wilderness activities				X		
8. Quantity and distribution of employment				X		
Distribution and density of population and housing				X		
10. Demands for government services				X		
11. Industrial and commercial activity				X		
12. Demands for energy			X			X
13. Locally adopted environmental plans and goals				X		
4. Transportation networks and traffic flows				X		

ther groups or agencies contacted or
ich may have overlapping jurisdiction. Water Quality Bureau, Missoula Co. Air Pollution

ividuals or groups contributing to this PER.

ecommendation concerning preparation of EIS. Preliminary - no EIS needed

ER Prepared by: Jon N. Bolstad

DATE: October 19, 1976

SD-1

Explanatory Comments for Preliminary Environmental Review

Hoerner-Waldorf Permit Renewal

GENERAL

As previously stated, this PER has been prepared by evaluating the impacts of approval of the renewal application against the impacts of the plant expansion as approved by the Department in December 1974. The evaluation is not based on a comparison of expansion versus no expansion, but on potential changes in environmental impacts resulting from changes in the expansion program of Hoerner-Waldorf. The evaluation of environmental impacts of this expansion program as a whole was conducted by the Department and an environmental impact statement prepared in November, 1974.

The proposed expansion with modifications may also create some significant beneficial impacts. Any possible beneficial impact has been rated very conservatively, i.e., assumed negligible.

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

2. Water quality, quantity and distribution.

Hoerner-Waldorf has indicated some changes in the potential quantity of mill effluent (25.3 million gallons per day (mdg) vs. 21.6 mgd average) and a possible increase in clean, warm water (cooling water). The cooling water increase would result from in-plant recycling efforts to reduce the contaminated discharge. The Water Quality Bureau has indicated that these possible modifications should have little or no environmental impact.

5. Aesthetics

The proposed changes include construction of a new recovery boiler instead of repair and modifications to an existing unused unit. This will result in changes in the physical configuration of the mill site and thus its appearance. Considering the size of the facility and its current appearnce, this impact will be minor.

6. Air Quality

The revised expansion program is predicted to have no adverse effect on air quality. In fact, any effect will probably be beneficial due to the additional air pollution control. The following table describes the emission levels.

	Emissions Pounds/Day		
Pollutant	EIS	Current	Expanded Mill
Total Particulate	5311	4286	4583
Total Sulfate	2371	1717	2265
Total Reduced Sulfur	3289	2149	745

The data above shows that the expanded mill is projected to have a lower emission level than those previous levels on which the EIS and the permit approval of December, 1974, was based. The reductions show by the data for the current mill are the result of improvements in the mill and from additional testing.

8. Demands on environmental resources of land, water, air and energy.

Changes in expansion plans include items of air pollution control equipment which will result in higher pollutant removal efficiencies and lower emissions. This additional equipment will require additional energy for operation. This additional energy consumption is considered a minor effect, considering the mill's current demands and the benefits to be obtained.

POTENTIAL IMPACTS ON HUMAN ENVIRONMENT

3. Local and state tax base and tax revenue.

If the expansion had been effected as originally scheduled, both local and state governments would have been receiving additional revenues from property and income tax as the project progressed. The delay in implementation has resulted in loss or delay in revenues during the past two years. However, inflation during the period has resulted in increased costs for equipment which will increase the tax base.

12. Demands for energy.

The discussion previously presented on demands on environmental resources applies here. This additional energy demand is not expected to affect the supply or services to other consumers.

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Department of Health and Environmental Sciences
STATE OF MONTANA HELENA, MONTANA 59601

John S. Anderson M.D.
DIRECTOR

STATE DOCUMENTS

OCT 27 1976

October 26, 1976

Re: Mallard Springs Subdivision
Sweet Grass County

Honorable Thomas Judge, Governor, State of Montana, Helena
Citizens Advocate, Helena
Environmental Quality Council, Helena
Montana Fish and Game Department, Helena
Department of Highways, Helena
Department of Community Affairs, Division of Planning, Helena
Department of Natural Resources and Conservation, Helena
Department of State Lands, Helena
Montana State Library, Helena
Board of County Commissioners, Courthouse, Big Timber, MT 59011
City-County Planning Board, Courthouse, Big Timber, MT 59011
Sanitarian, Ray Hedrick, Box 109, Livingston, MT 59047
Environmental Information Center, Box 12, Helena
C. W. Gonder, 823 East Call Street, Livingston
Mrs. Vel Jansen, 430 South Sixth, Livingston
Mrs. Winifred Lucky, 420 South Sixth, Livingston
Mary Lee Reese, League of Women Voters, 29 South Alta, Helena
Tom Horobik, Pres., Montana Wilderness Assn., 4000 4th Ave. N., Great Falls
Northern Rockies Action Group, #9 Placer Street, Helena
Paul T. Richards, 1836 Floweree, Helena
John Schillinger, Microbiology Department, Montana State University, Bozeman
Concerned Citizens for a Quality Environment, c/o Ron Erickson, Chairman,
University of Montana, Missoula
Student Environmental Research Center, University of Montana, Room 212,
Venture Center, Missoula
John P. Duke, Assistant Vice President, Land Management, Burlington
Northern, 650 Central Building, Seattle, Washington, 98104
Herb Anderson, P. O. Box 42, Raynesford, MT 59469
Mike Roach, Air Quality Bureau, Environmental Sciences Division
Don Willems, Water Quality Bureau, Environmental Sciences Division
State-Local Relations Project, Commission on Local Government,
State Capitol, Helena
J. Anne Skinner, Public Information Unit, DHES, Helena
Audubon Society, Attn: Sam Sperry, 1823 Highland Avenue, Helena
Ducks Unlimited, Attn: Patrick McDonough, Box 327, Billings
Montana Cooperative Wildlife Research Unit, Attn: Dr. John Craighead,
University of Montana, Missoula
Montana Outfitter and Dude Ranchers Association, Attn: Glen Childers,
7-B Ranch, Brusett
Montana Wildlife Federation, Attn: Don Aldrich, 410 Woodworth Ave.,
Missoula
Montana Women's Political Caucus, Attn: Elenor Pratt, 1434 South 3rd,
Bozeman
Montana Woolgrowers Association, Box 1693, Helena
Sierra Club, Attn: Joe Angell, General Delivery, Helena

Trout Unlimited, Attn: Jim Handley, Box 140, Manhattan
Wilderness Society, Attn: Bill Cunningham, Box 12, Helena
Rick Graetz, Box 894, Helena,
Rick Johnson, Border Grizzly Project, School of Forestry, University of Montana, Missoula
Josephson and Fredricks, Box 1047, Big Timber
First Big Timber Corp., Box 1047, Big Timber
Montana Bureau of Mines & Geology, Butte, MT 59701
Park Electric Co-operative Inc., Box 908, Livingston
Continental Telephone of the West, Box 867, Big Timber
Big Timber Volunteer Fire Dept., Big Timber
City of Big Timber - Sweet Grass County Sheriff-Police Dept., Big Timber
Big Timber Grade School, Big Timber
Sweet Grass County High School, Big Timber
Kenneth G. Boe, Big Timber
Ellen V. Boe, Big Timber
Jones E. Faw, Big Timber
Clayton Ranch, Inc., Big Timber
Harold Hawks, Big Timber
Christian, Spring, Sielbach & Associates, 2020 Grand Ave., Billings, 59102

Ladies & Gentlemen:

The enclosed preliminary environmental review has been prepared for Mallard Springs, a proposed subdivision in Sweet Grass County. This environmental review is submitted for your consideration. Comments and questions will be accepted for 10 days following issuance of this statement at which time it will be assumed that the persons or agencies consulted have no comments to make. One extension of time not to exceed seven (7) days will be granted upon request if there is sufficient reason for said request. All comments should be sent to the undersigned.

Sincerely yours,

Edward W. Casne, Chief
Subdivision Bureau
Environmental Sciences Division
Phone: 449-3946

EWC:APK:ti
Enclosure
cc: Ben Wake
Terry Carmody
Tom Ellerhoff

PRELIMINARY ENVIRONMENTAL REVIEW

Department of Health and Environmental Sciences

Division/Bureau Environmental Sciences Division/Subdivision Bureau

Project or Application Mallard Springs Subdivision

Description of Project The proposed subdivision would consist of 35 residential lots on 61.94 acres and 72.22 acres in common area. It is located about 4 miles east of Big Timber (see attached map). This subdivision is not a second home or recreational development. It would be served by individual water and sewer systems.

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Terrestrial and aquatic life and habitats			✓			*
2. Water quality, quantity and distribution			✓			*
3. Geology and soil quality, stability and moisture			✓			
4. Vegetation cover, quantity and quality			✓			
5. Aesthetics		✓				*
6. Air quality			✓			*
7. Unique, endangered, fragile, or limited environmental resources				✓		
8. Demands on environmental resources of land, water, air and energy			✓			
9. Historical and archaeological sites				✓		

POTENTIAL IMPACTS ON HUMAN ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Social structures and mores			✓			
2. Cultural uniqueness and diversity			✓			
3. Local and state tax base and tax revenue			✓			
4. Agricultural or industrial production			✓			*
5. Human health				✓		
6. Quantity and distribution of community and personal income				✓		
7. Access to and quality of recreational and wilderness activities			✓			
8. Quantity and distribution of employment				✓		
9. Distribution and density of population and housing			✓			
10. Demands for government services			✓			*
11. Industrial and commercial activity				✓		
12. Demands for energy			✓			
13. Locally adopted environmental plans and goals				✓		
14. Transportation networks and traffic flows			✓			

Other groups or agencies contacted or which may have overlapping jurisdiction. ______

Individuals or groups contributing to this PER. See Attachment #1

Recommendation concerning preparation of EIS. Circulate PER

PER Prepared by: Tom Ellerhoff and Alfred Keppner

DATE: October 26, 1976

ESD-1

MONTANA STATE DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES

PRELIMINARY ENVIRONMENTAL REVIEW CONTINUED
Mallard Springs Subdivision
a proposed subdivision in Sweet Grass County

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

1. Since the area to be used for development has been leveled and used for irrigated hay meadow, the natural vegetation has already been altered. No aquatic habitats exist on the area to be developed. The Region 5 staff of the Montana Fish & Game had no comments with respect to wildlife.

2. Two wells have been drilled on the subject property. Chemical and bacterial tests have shown the water to be of good quality. A well also exists on an adjacent tract of land.

5. The proposed subdivision is situated in a scenic setting. The Crazy Mountains are situated northwest of the property, the Bridger Range to the west, the Absaroka Range to the south and the Yellowstone River forms the eastern boundary. The land beyond the river is rolling prairie.

   Man's intervention in the area is obvious. The river bottom land is now used for growing hay and pasture. Irrigation ditches traverse the land, with a number of farm buildings situated in the northeastern corner of the property. The Burlington Northern tracks run near the southwest edge of the development and Interstate 90 will soon be relocated to parrallel the south side of the tracks.

   The creation of a subdivision in the area may be aesthetically displeasing to some people, but it will not be the first step in converting the land from its natural state to a developed area. The proximity of the railroad and interstate highway have added to the transition in land use.

   The owners are attempting to develop in harmony with the existing landscape. The few trees growing in the area will not be destroyed and the marsh bordering the west side of the property will be preserved for private duck hunting. Additionally, the developers have drawn up a set of restrictive covenants to control development.

6. Increased traffic, heating, etc. will change the air quality to a minor effect in a localized area.

POTENTIAL IMPACTS ON THE HUMAN ENVIRONMENT

4. Approximately 62 acres of irrigated hay land will be removed from production.

10. The City of Big Timber can and will serve the development. Collection service could be available when sufficient houses are built.

    The superintendant of the Big Timber grade school and principal of the Sweet Grass County High School state their institutions can absorb the anticipated additional students.

    The county sheriff's office and Big Timber Volunteer Fire Department states they can serve the development without over extending their facilties. Power and telephone services are also available.

ALTERNATIVES

1. Approve the development without preparation of an environmental impact statement.

2. Write an environmental impact statement prior to further consideration of approval.

3. Disapprove the Development as proposed.

RECOMMENDATIONS

The Department of Health and Environmental Sciences recommends the first alternative.

Agencies Consulted:

Sweet Grass City-County Health Dept.
Park Electric Co-operative, Inc.
Continental Telephone of the West
Big Timber Volunteer Fire Dept.
City of Big Timber-Sweet Grass County Sheriff-Police Dept.
Big Timber Grade School
Sweet Grass County High School
Dept. of Fish & Game
Dept. of Natural Resources and Conservation
Dept. of Highway
Bureau of Mines & Geology
City of Big Timber

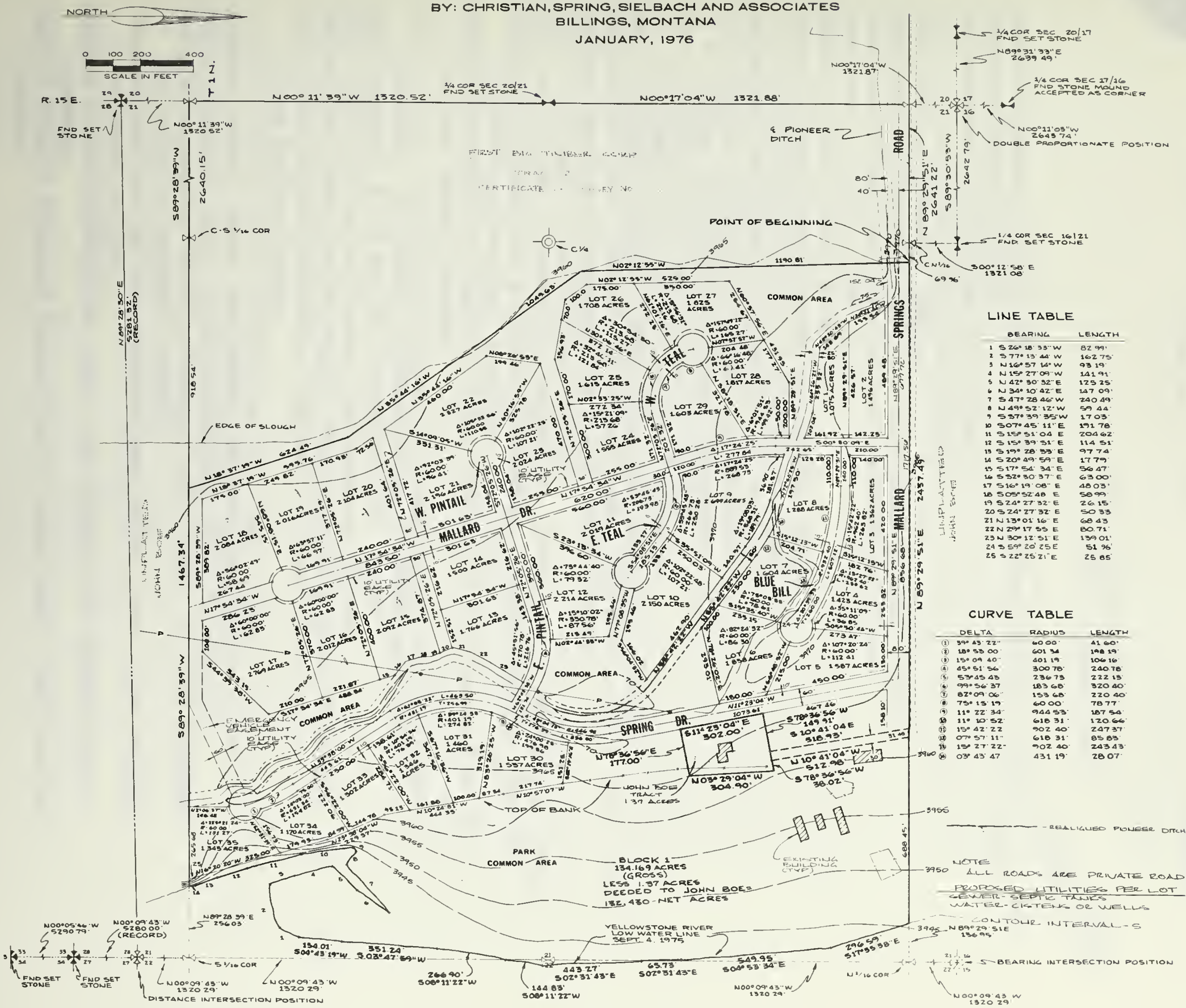
Prepared by: Tom Ellerhoff and Alfred P. Keppner, October 19, 1976.

PRELIMINARY

MALLARD SPRINGS SUBDIVISION

LOCATED IN TRACT 3 OF CERTIFICATE OF SURVEY NO. ___
SECTION 21, T.1N., R.15E. P.M.M.
SWEET GRASS COUNTY, MONTANA

FOR: FIRST BIG TIMBER CORPORATION
BY: CHRISTIAN, SPRING, SIELBACH AND ASSOCIATES
BILLINGS, MONTANA
JANUARY, 1976



LINE TABLE

	BEARING	LENGTH
1	S 26° 18' 33" W	82.99'
2	S 77° 13' 44" W	162.75'
3	N 16° 57' 14" W	93.19'
4	N 15° 27' 09" W	141.91'
5	N 42° 30' 32" E	125.25'
6	N 34° 10' 42" E	147.09'
7	S 47° 28' 46" W	240.49'
8	N 49° 52' 12" W	59.44'
9	S 57° 39' 35" W	17.03'
10	S 07° 45' 11" E	191.78'
11	S 15° 51' 04" E	204.62'
12	S 15° 39' 51" E	114.51'
13	S 19° 28' 33" E	97.74'
14	S 20° 49' 59" E	17.79'
15	S 17° 54' 34" E	56.47'
16	S 52° 30' 37" E	63.00'
17	S 16° 19' 08" E	48.03'
18	S 05° 52' 48" E	58.99'
19	S 24° 27' 32" E	26.15'
20	S 24° 27' 32" E	50.33'
21	N 13° 01' 16" E	68.43'
22	N 29° 17' 55" E	80.71'
23	N 30° 12' 51" E	139.01'
24	S 59° 20' 25" E	51.96'
25	S 22° 25' 21" E	25.85'

CURVE TABLE

	DELTA	RADIUS	LENGTH
①	39° 43' 22"	60.00'	41.60'
②	18° 53' 00"	601.34'	198.19'
③	15° 09' 40"	401.19'	106.16'
④	45° 51' 56"	300.78'	240.78'
⑤	53° 45' 43"	236.73'	222.15'
⑥	99° 56' 37"	183.68'	320.40'
⑦	82° 09' 06"	153.68'	220.40'
⑧	75° 15' 19"	60.00'	78.77'
⑨	11° 22' 34"	944.53'	187.54'
⑩	11° 10' 52"	618.31'	120.66'
⑪	15° 42' 22"	902.40'	247.37'
⑫	07° 57' 11"	618.31'	85.83'
⑬	15° 27' 22"	902.40'	243.43'
⑭	03° 43' 47"	431.19'	28.07'

— REALIGNED PIONEER DITCH

NOTE
ALL ROADS ARE PRIVATE ROADS

PROPOSED UTILITIES PER LOT
SEWER - SEPTIC TANKS
WATER - CISTERNS OR WELLS

CONTOUR INTERVAL - 5

BEARING INTERSECTION POSITION

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Department of Health and Environmental Sciences
STATE OF MONTANA HELENA, MONTANA 59601

John S. Anderson M.D.
DIRECTOR

September 28, 1976

Re: Bull Run Acres
Lewis & Clark County

STATE DOCUMENTS
SEP 30 1976

Honorable Thomas Judge, Governor, State of Montana, Helena
Citizens Advocate, Helena
Environmental Quality Council, Helena
Montana Fish and Game Department, Helena
Department of Highways, Helena
Department of Community Affairs, Division of Planning, Helena
Department of Natural Resources and Conservation, Helena
Department of State Lands, Helena
Montana State Library, Helena
Board of County Commissioners, Courthouse, Helena
City-County Planning Board, 38 South Main, Helena
Sanitarian, Les Cramer, 201 South Main, Helena
Environmental Information Center, Box 12, Helena
C. W. Gonder, 823 East Call Street, Livingston
Mrs. Vel Jansen, 430 South Sixth, Livingston
Mrs. Winifred Lucky, 420 South Sixth, Livingston
Mary Lee Reese, League of Women Voters, 29 South Alta, Helena
Tom Horobik, Pres., Montana Wilderness Assn., 4000 4th Ave. N., Great Falls
Northern Rockies Action Group, #9 Placer Street, Helena
Paul T. Richards, 1836 Floweree, Helena
John Schillinger, Microbiology Department, Montana State University, Bozeman
Concerned Citizens for a Quality Environment, c/o Ron Erickson, Chairman, University of Montana, Missoula
Student Environmental Research Center, University of Montana, Room 212, Venture Center, Missoula
John P. Duke, Assistant Vice President, Land Management, Burlington Northern, 650 Central Building, Seattle, Washington, 98104
Herb Anderson, P. O. Box 42, Raynesford, MT 59469
Mike Roach, Air Quality Bureau, Environmental Sciences Division
Don Willems, Water Quality Bureau, Environmental Sciences Division
State-Local Relations Project, Commission on Local Government, State Capitol, Helena
J. Anne Skinner, Public Information Unit, DHES, Helena
Audubon Society, Attn: Sam Sperry, 1823 Highland Avenue, Helena
Ducks Unlimited, Attn: Patrick McDonough, Box 327, Billings
Montana Cooperative Wildlife Research Unit, Attn: Dr. John Craighead, University of Montana, Missoula
Montana Outfitter and Dude Ranchers Association, Attn: Glen Childers, 7-B Ranch, Brusett
Montana Wildlife Federation, Attn: Don Aldrich, 410 Woodworth Ave., Missoula
Montana Women's Political Caucus, Attn: Elenor Pratt, 1434 South 3rd, Bozeman

Montana Woolgrowers Association, Box 1693, Helena
Sierra Club, Attn: Joe Angell, General Delivery, Helena
Trout Unlimited, Attn: Jim Handley, Box 140, Manhattan
Wilderness Society, Attn: Bill Cunningham, Box 12, Helena
Bill Diehl, 1420 Prospect Avenue, Helena
Morrison-Maierle, Inc., 910 Helena Avenue, Helena

Ladies & Gentlemen:

The enclosed preliminary environmental review has been prepared for Bull Run Acres in Lewis & Clark County. This environmental review is submitted for your consideration. Comments and questions will be accepted for 10 days following issuance of this statement at which time it will be assumed that the persons or agencies consulted have no comments to make. One extension of time not to exceed seven (7) days will be granted upon request if there is sufficient reason for said request. All comments should be sent to the undersigned.

Sincerely yours,

Edward W. Casne, Chief
Subdivision Bureau
Environmental Sciences Division
Phone: 449-3946

EWC:TJW:ti
Enclosure
cc: Ben Wake
    Tom Ellerhoff
    Terry Carmody

PRELIMINARY ENVIRONMENTAL REVIEW

Department of Health and Environmental Sciences

Division/Bureau Subdivision Bureau

Project or Application Bull Run Acres - Lewis & Clark County

Description of Project A 348 lot subdivision on city water and sewer on the South edge of Helena

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Terrestrial and aquatic life and habitats				X		
2. Water quality, quantity and distribution				X		
3. Geology and soil quality, stability and moisture			X			*
4. Vegetation cover, quantity and quality		X				*
5. Aesthetics			X			*
6. Air quality			X			*
7. Unique, endangered, fragile, or limited environmental resources				X		
8. Demands on environmental resources of land, water, air and energy			X			*
9. Historical and archaeological sites				X		

POTENTIAL IMPACTS ON HUMAN ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Social structures and mores				X		
2. Cultural uniqueness and diversity				X		
3. Local and state tax base and tax revenue		X				*
4. Agricultural or industrial production			X			
5. Human health				X		
6. Quantity and distribution of community and personal income		X				See #8
7. Access to and quality of recreational and wilderness activities			X			*
8. Quantity and distribution of employment		X				*
9. Distribution and density of population and housing		X				*
10. Demands for government services		X				*
11. Industrial and commercial activity		X				See #8
12. Demands for energy		X				See #8 Sec.1
13. Locally adopted environmental plans and goals				x		
14. Transportation networks and traffic flows			x			

Other groups or agencies contacted or which may have overlapping jurisdiction. ____________________

Individuals or groups contributing to this PER. Maynard Olson, Supt. of Schools, Montana Power, Mountain Bell

Recommendation concerning preparation of EIS. Circulate P.E.R. for comments

PER Prepared by: Thomas J. Wing

DATE: September 28, 1976

ESD-1

PRELIMINARY ENVIRONMENTAL REVIEW
Bull Run Acres
Lewis & Clark County

Potential Impact on Physical Environment

3. Geology and Soil - Construction of streets, driveways and houses will disturb the soil strata to some extent. Proper slopes, drainage provisions and surfacing should minimize the effect.

4. Vegetation - Vegetation type will be changed over nearly 100 percent of the area upon completion. However, the change to lawns and shrubs should be an improvement in ground cover over existing grasses, weeds and scattered trees. Better water retention, less erosion.

5. Aesthetics - Change from dry but rather attractive foothills to housing developments. This is very subjective but new housing is generally not repulsive. Utility lines are to be buried.

6. Air Quality - Increased traffic, heating, etc. will change the quality somewhat in this localized area. Probably not a great effect on the valley as a whole.

8. Energy etc. - Water demands can be met by city. The land is master planned as residential and is not good agricultural land. Approximately six hundred fifteen (615) living units will create a demand for energy but Montana Power has the resources to handle it.

Potential Impact on Human Environment

3. Taxes - Large increase since this is going from agricultural to residential.

7. Access to and quality of recreation areas - Helena has many recreation areas within easy reach. This area is not prime recreation area but has been used by joggers, hikers, etc. They will have to go a little farther now.

8. Quantity and Distribution of Employment - Six hundred fifteen families means more construction, more business and hopefully more jobs.

9. Population density - Population within Helena generally seems to shift to the East. The West side is going to suffer somewhat. Access to services such as grocery stores and retail stores is good.

10. Water, Sewer, Government Services - Water is okay. Sewer will require new out fall, planned anyway, more fire protection, more school rooms and police protection. Schools are suffering a shortage of classrooms now. Will require an addition to the High School and a new elementary school in the area. The Superintendent of Schools does not figure increase in taxes will cover this. However, any increase in population will require more schools and the school system has been planning on expansion as necessitated by community growth.

Alternatives

(1) Approve the development without preparation of an environmental impact statement under the following conditions:

  (a) Finalized water and sewer plans be submitted and approved by this Department prior to any construction of dwellings, etc.

  (b) When developing the subdivision, the developer shall abide by the provisions of the Certificate of Plat Approval and by the Department of Health and Environmental Sciences and Lewis & Clark County Health Department regulations pertaining to water supply, sewage disposal and solid waste disposal.

(2) Write an environmental impact statement prior to further consideration of approval.

(3) Disapprove the development as proposed.

Recommendations

The Department of Health and Environmental Sciences recommends the first alternative. In the event condition (b) is not met, this Department will seek legal action under the provisions of Section 69-5007 and 69-5008, R.C.M. 1947.

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Department of Health and Environmental Sciences
STATE OF MONTANA HELENA, MONTANA 59601

John S. Anderson M.D.
DIRECTOR

September 28, 1976

STATE DOCUMENTS
SEP 30 1976

Re: Bull Run Acres
Lewis & Clark County

Honorable Thomas Judge, Governor, State of Montana, Helena
Citizens Advocate, Helena
Environmental Quality Council, Helena
Montana Fish and Game Department, Helena
Department of Highways, Helena
Department of Community Affairs, Division of Planning, Helena
Department of Natural Resources and Conservation, Helena
Department of State Lands, Helena
Montana State Library, Helena
Board of County Commissioners, Courthouse, Helena
City-County Planning Board, 38 South Main, Helena
Sanitarian, Les Cramer, 201 South Main, Helena
Environmental Information Center, Box 12, Helena
C. W. Gonder, 823 East Call Street, Livingston
Mrs. Vel Jansen, 430 South Sixth, Livingston
Mrs. Winifred Lucky, 420 South Sixth, Livingston
Mary Lee Reese, League of Women Voters, 29 South Alta, Helena
Tom Horobik, Pres., Montana Wilderness Assn., 4000 4th Ave. N., Great Falls
Northern Rockies Action Group, #9 Placer Street, Helena
Paul T. Richards, 1836 Floweree, Helena
John Schillinger, Microbiology Department, Montana State University, Bozeman
Concerned Citizens for a Quality Environment, c/o Ron Erickson, Chairman,
University of Montana, Missoula
Student Environmental Research Center, University of Montana, Room 212,
Venture Center, Missoula
John P. Duke, Assistant Vice President, Land Management, Burlington
Northern, 650 Central Building, Seattle, Washington, 98104
Herb Anderson, P. O. Box 42, Raynesford, MT 59469
Mike Roach, Air Quality Bureau, Environmental Sciences Division
Don Willems, Water Quality Bureau, Environmental Sciences Division
State-Local Relations Project, Commission on Local Government,
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Montana Women's Political Caucus, Attn: Elenor Pratt, 1434 South 3rd,
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Bill Diehl, 1420 Prospect Avenue, Helena
Morrison-Maierle, Inc., 910 Helena Avenue, Helena

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Sincerely yours,

Edward W. Casne, Chief
Subdivision Bureau
Environmental Sciences Division
Phone: 449-3946

EWC:TJW:ti
Enclosure
cc: Ben Wake
Tom Ellerhoff
Terry Carmody

PRELIMINARY ENVIRONMENTAL REVIEW

Department of Health and Environmental Sciences

Division/Bureau Subdivision Bureau
Project or Application Bull Run Acres - Lewis & Clark County
Description of Project A 348 lot subdivision on city water and sewer on the South edge of Helena

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Terrestrial and aquatic life and habitats				X		
2. Water quality, quantity and distribution				X		
3. Geology and soil quality, stability and moisture			X			*
4. Vegetation cover, quantity and quality		X				*
5. Aesthetics			X			*
6. Air quality			X			*
7. Unique, endangered, fragile, or limited environmental resources				X		
8. Demands on environmental resources of land, water, air and energy			X			*
9. Historical and archaeological sites				X		

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4. Agricultural or industrial production			X			
5. Human health				X		
6. Quantity and distribution of community and personal income		X				See #8
7. Access to and quality of recreational and wilderness activities			X			*
8. Quantity and distribution of employment		X				*
9. Distribution and density of population and housing		X				*
10. Demands for government services		X				*
11. Industrial and commercial activity		X				See #8
12. Demands for energy		X				See #8 Sec.1
13. Locally adopted environmental plans and goals				x		
14. Transportation networks and traffic flows			x			

Other groups or agencies contacted or which may have overlapping jurisdiction. __________

Individuals or groups contributing to this PER. Maynard Olson, Supt. of Schools, Montana Power, Mountain Bell

Recommendation concerning preparation of EIS. Circulate P.E.R. for comments

PER Prepared by: Thomas J. Wing

DATE: September 28, 1976

ESD-1

PRELIMINARY ENVIRONMENTAL REVIEW
Bull Run Acres
Lewis & Clark County

Potential Impact on Physical Environment

3. Geology and Soil - Construction of streets, driveways and houses will disturb the soil strata to some extent. Proper slopes, drainage provisions and surfacing should minimize the effect.

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9. Population density - Population within Helena generally seems to shift to the East. The West side is going to suffer somewhat. Access to services such as grocery stores and retail stores is good.

10. Water, Sewer, Government Services - Water is okay. Sewer will require new out fall, planned anyway, more fire protection, more school rooms and police protection. Schools are suffering a shortage of classrooms now. Will require an addition to the High School and a new elementary school in the area. The Superintendent of Schools does not figure increase in taxes will cover this. However, any increase in population will require more schools and the school system has been planning on expansion as necessitated by community growth.

Alternatives

(1) Approve the development without preparation of an environmental impact statement under the following conditions:

  (a) Finalized water and sewer plans be submitted and approved by this Department prior to any construction of dwellings, etc.

  (b) When developing the subdivision, the developer shall abide by the provisions of the Certificate of Plat Approval and by the Department of Health and Environmental Sciences and Lewis & Clark County Health Department regulations pertaining to water supply, sewage disposal and solid waste disposal.

(2) Write an environmental impact statement prior to further consideration of approval.

(3) Disapprove the development as proposed.

Recommendations

The Department of Health and Environmental Sciences recommends the first alternative. In the event condition (b) is not met, this Department will seek legal action under the provisions of Section 69-5007 and 69-5008, R.C.M. 1947.

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Department of Health and Environmental Sciences
STATE OF MONTANA HELENA, MONTANA 59601

~~John S. Anderson M.D.~~
DIRECTOR
A. C. Knight, M. D., F. C. C. P.
ACTING DIRECTOR

September 27, 1976

√State Library, Helena
Board of County Commissioners, Flathead County Courthouse, Kalispell
City-County Planning Board, Room 3, the Ford Building, Kalispell
County Sanitarian's Office, Box 919, Kalispell
Kalispell Branch Office, Box 1031, Kalispell
Environmental Quality Council, Helena
Department of Fish and Game, Helena
Flathead Drainage 208, Box 343, Kalispell
Mr. Benjamin W. Louden, 2415 Lower Valley Road, Kalispell
Mr. Thomas Riedel, 1815 Lower Valley Road, Kalispell
Mr. Lawrence Periman, Lower Valley Road, Kalispell
Mr. John Jellar, 403 Wagner Lane, Kalispell
Mr. Robert Sands, 1985 Lower Valley Road, Kalispell
Mr. Charles Plummer, 2115 Lower Valley Road

PRELIMINARY ENVIRONMENTAL REVIEW FOR THE CAL LOUDEN FARMS

Pursuant to the Montana Administrative Code, Section 16-2.2(2)-P2030 (Rule IV), the following preliminary environmental review has been prepared by the Department of Health and Environmental Sciences concerning the Cal Louden Farms and a request by Mr. Ben Louden for a waste discharge permit for that confined swine operation located southeast of Kalispell, Montana.

The purpose of this preliminary environmental review is to inform all interested governmental agencies, public groups, or individuals of the proposed action and to determine whether or not the action may have a significant effect on the human environment. This preliminary environmental review will be circulated for a period of ten days at which time a decision will be made as to our future action. If you care to comment on this proposed action, please do so within that allotted time. If substantial adverse comment is not received during that review period, no environmental impact statement will be prepared and no further notification to the above groups will be made and the waste discharge permit will be issued.

The Cal Louden Farms proposes to construct an animal confinement facility for the rearing of swine. It is proposed to construct this facility at two different locations. The facilities for farrowing will be located in the SE¼, NW¼, Sec. 31, T. 28 N., R. 20 W., of Flathead County. The feeding or finishing portion of the animal confinement facility will be located in the NW¼, NW¼ OF Sec. 32, which is directly adjacent to the aforementioned section. This area is located approximately six miles southeast of Kalispell, Montana near the Flathead River. The approximate location of this animal confinement facility is indicated on the attached map.

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[illegible]

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The facilities for farrowing will include space for a total of 126 mature hogs. Pig litters will remain at this site until they reach approximately 20 pounds at which time they will be transferred to the feeding facility. The feeding facility will have capacity for approximately 700 animals, ranging in weight from 20 pounds to market weight.

The proposed facilities will consist of open front buildings with a concrete slab extending out from the building. The livestock will then be confined on this concrete area. Due to the slope of the concrete pen floors, the waste material which accumulates on those floors will gradually move to a concrete apron which parallels the front of the pens. It can then be removed and disposed of on adjacent agricultural land. Precipitation falling on the animal confinement facility would likewise carry waste material to this same slab and during periods of excessive moisture onto settling basins which will be constructed to entrap the waste material. Any overflow of liquid waste from the settling basins will be diverted onto adjacent cropland through a terrace system. The waste material which accumulates in the settling basins will be removed as necessary to retain maximum storage capacity in that facility. Approximately 500 acres of agricultural land is available for waste disposal.

Any animal confinement facility can have an effect on the surrounding environment. Adverse effects can, however, be minimized through implementation of a good waste management program. Odors around an animal confinement facility such as being proposed here can be minimized through good housekeeping in the confinement unit. Periodic scraping of the pen area and proper disposal on the adjacent agricultural land should minimize the extent of objectionable odors. Flies around the animal confinement facility should be controlled through the routine cleaning program and by baiting or spraying if necessary. Dead animals will be disposed of through burial.

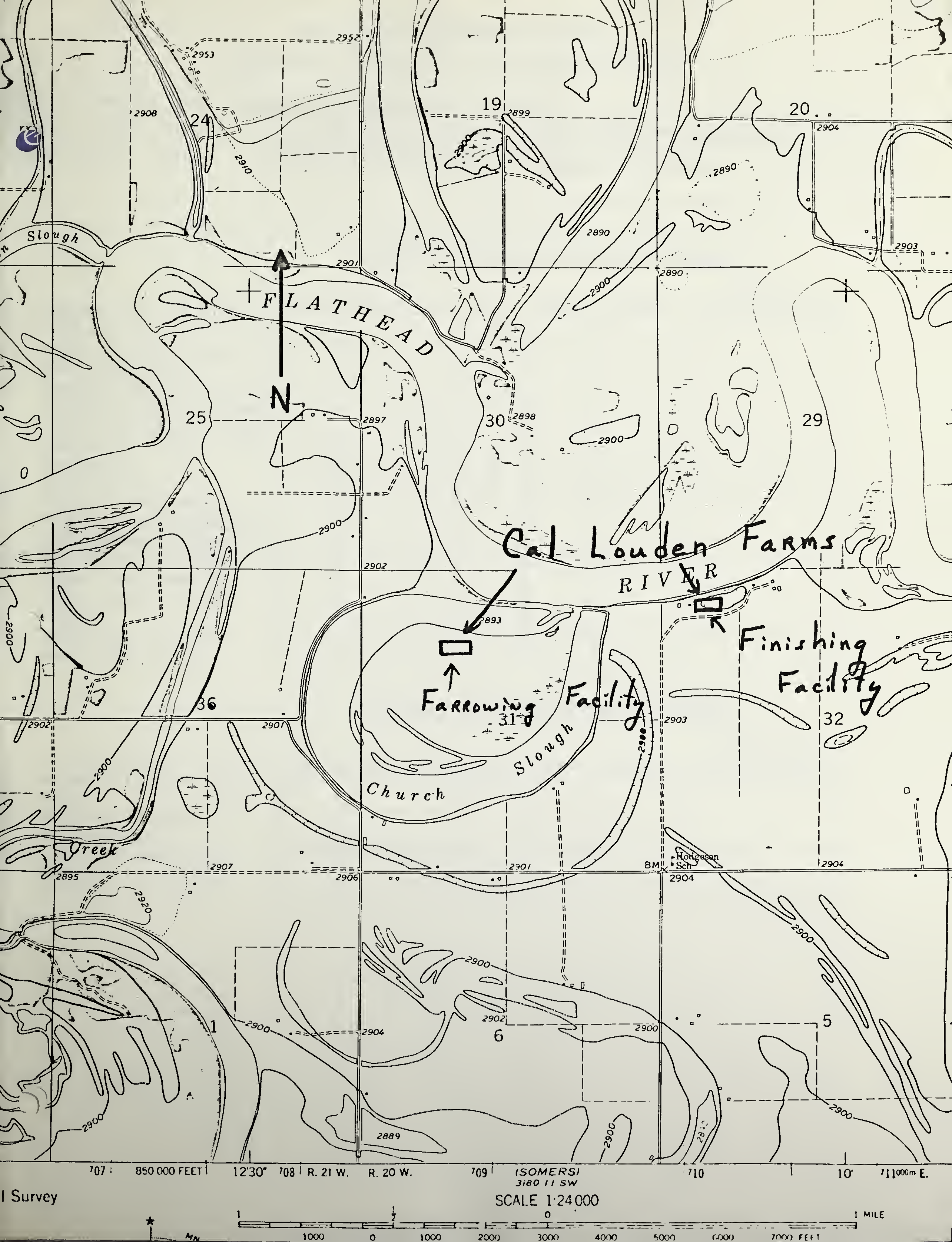
This proposed operation should result in minimal impact on the physical environment. Certain resources will be committed through the construction of the facility itself, and approximately two acres of agricultural land will be taken out of production. Vegetative cover and soil quality should both be improved through the utilization of the waste material as a fertilizer and for its soil building capabilities. Since the area is agricultural in nature, a facility such as proposed should be very compatible. Secondary and social impact due to the proposed action should be minimal due to the fact that the area is utilized for agricultural production as previously mentioned.

If the waste management program as outlined in this preliminary environmental review is adhered to, problems associated with animal confinement facilities should be eliminated or significantly minimized.

Steven L. Pilcher

Steven L. Pilcher
Water Quality Bureau
Environmental Sciences Division

SLP:vlf
Attachment
cc: Ben Wake
Air Quality Bureau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Cal Louden Farms
Farrowing Facility
Finishing Facility
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PRELIMINARY ENVIRONMENTAL REVIEW

Department of Health and Environmental Sciences

Division/Bureau Env. Sciences Div./Water Quality Bureau

Project or Application Cal Louden Farms - Proposed animal confinement facility

Description of Project Confined swine facility - farrowing to finishing

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Terrestrial and aquatic life and habitats			X			
2. Water quality, quantity and distribution			X			
3. Geology and soil quality, stability and moisture			X			
4. Vegetation cover, quantity and quality			X			
5. Aesthetics			X			
6. Air quality			X			
7. Unique, endangered, fragile, or limited environmental resources				X		
8. Demands on environmental resources of land, water, air and energy			X			
9. Historical and archaeological sites					X	

POTENTIAL IMPACTS ON HUMAN ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Social structures and mores				X		
2. Cultural uniqueness and diversity				X		
3. Local and state tax base and tax revenue			X			
4. Agricultural or industrial production			X			
5. Human health				X		
6. Quantity and distribution of community and personal income			X			
7. Access to and quality of recreational and wilderness activities				X		
8. Quantity and distribution of employment			X			
9. Distribution and density of population and housing				X		
0. Demands for government services			X			
1. Industrial and commercial activity			X			
2. Demands for energy			X			
3. Locally adopted environmental plans and goals				X		
4. Transportation networks and traffic flows			X			

th[illegible] groups or agencies contacted or wh[illegible] may have overlapping jurisdiction. see distribution list

ndividuals or groups contributing to this PER. Steven L. Pilcher

ecommendation concerning preparation of EIS. EIS not required

ER Prepared by: Steven L. Pilcher

DATE: 9/22/76

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Sept.2,'76

Department of Health and Environmental Sciences
STATE OF MONTANA HELENA, MONTANA 59601

~~John S. Anderson M.D.
DIRECTOR~~
A. C. Knight, M. D., F. C. C. P.
ACTING DIRECTOR

September 2, 1976

Board of County Commissioners, Ravalli County Courthouse, Hamilton
County Planning Board, Ravalli County Courthouse, Hamilton
Chuck Stahl, Co. Sanitarian, Box 5019, Courthouse, Hamilton
Environmental Quality Council, Helena
Department of Fish and Game, Helena
✓State Library, Helena
Mr. James Iman, Route 1, Box 2363A, Hamilton 59840
Mr. Vang Pao, Route 1, Box 35, Victor 59875
Mr. Frank Williams, Route 2, Box 2335A, Hamilton
Mr. Phil Baden, Route 2, Cherry Bar Ranch, Hamilton
Mr. Jack Dodson, Route 1, Box 34G, Victor
Mr. Gerald Dutton, Route 1, Box 34C, Victor
Mr. Del Connor, Route 1, Box 34B, Victor
Mr. J. E. Snyder, Route 1, Box 34A, Victor
Mr. Boyce Hill, Route 1, Box 33, Victor
Mr. K. L. Kershner, Route 1, Box 63, Victor
Mr. Roy Hern, Route 1, Box 64, Victor
Mr. Norman Allison, Route 1, Box 65A, Victor

PRELIMINARY ENVIRONMENTAL REVIEW FOR THE VANG PAO CONFINEMENT HOG OPERATION

Pursuant to the Montana Administrative Code, Section 16-2.2(2)-P2030 (Rule IV), the following preliminary environmental review has been prepared by the Department of Health and Environmental Sciences concerning the Vang Pao confinement hog operation and a request by Mr. James Iman for a waste discharge permit for that animal confinement facility located northwest of Corvallis, Montana.

The purpose of this preliminary environmental review is to inform all interested governmental agencies, public groups, or individuals of the proposed action and to determine whether or not the action may have a significant effect on the human environment. This preliminary environmental review will be circulated for a period of ten days at which time a decision will be made as to our future action. If you care to comment on this proposed action, please do so within that alloted time.

The proposed animal confinement facility around which this action is centered will be located in the SE¼, NE¼, Sec. 25, T.7N., R.21W., of Ravalli County, approximately two miles west and one mile north of Corvallis, Montana. The approximate location of this facility is indicated on Figure No. 1.

The animal confinement facility which is being proposed is known as a total confinement operation as the livestock associated with this proposed

facility will be totally confined within buildings on the premises. The operation will consist of farrowing 100 sows and feeding to market weight the pigs which are produced. The proposal is to utilize an existing airplane hanger for feed storage, a nursery unit, and a growing unit. Separate buildings will be constructed for farrowing and for finishing. The waste material which is produced within the buildings will be contained in liquid manure pits at each building and in a supplemental storage tank. Total storage capacity of approximately 225,000 gallons will be provided which should exceed the minimum storage requirements.

The waste material which accumulates within the liquid manure facilities will be periodically removed and disposed of on adjacent agricultural land. Approximately 220 acres of such land is available for this purpose. During the summer months, the waste material will be mixed with irrigation waters and spread on cropland. During spring and fall, the waste material will be spread and incorporated with the soil within 36 hours of spreading.

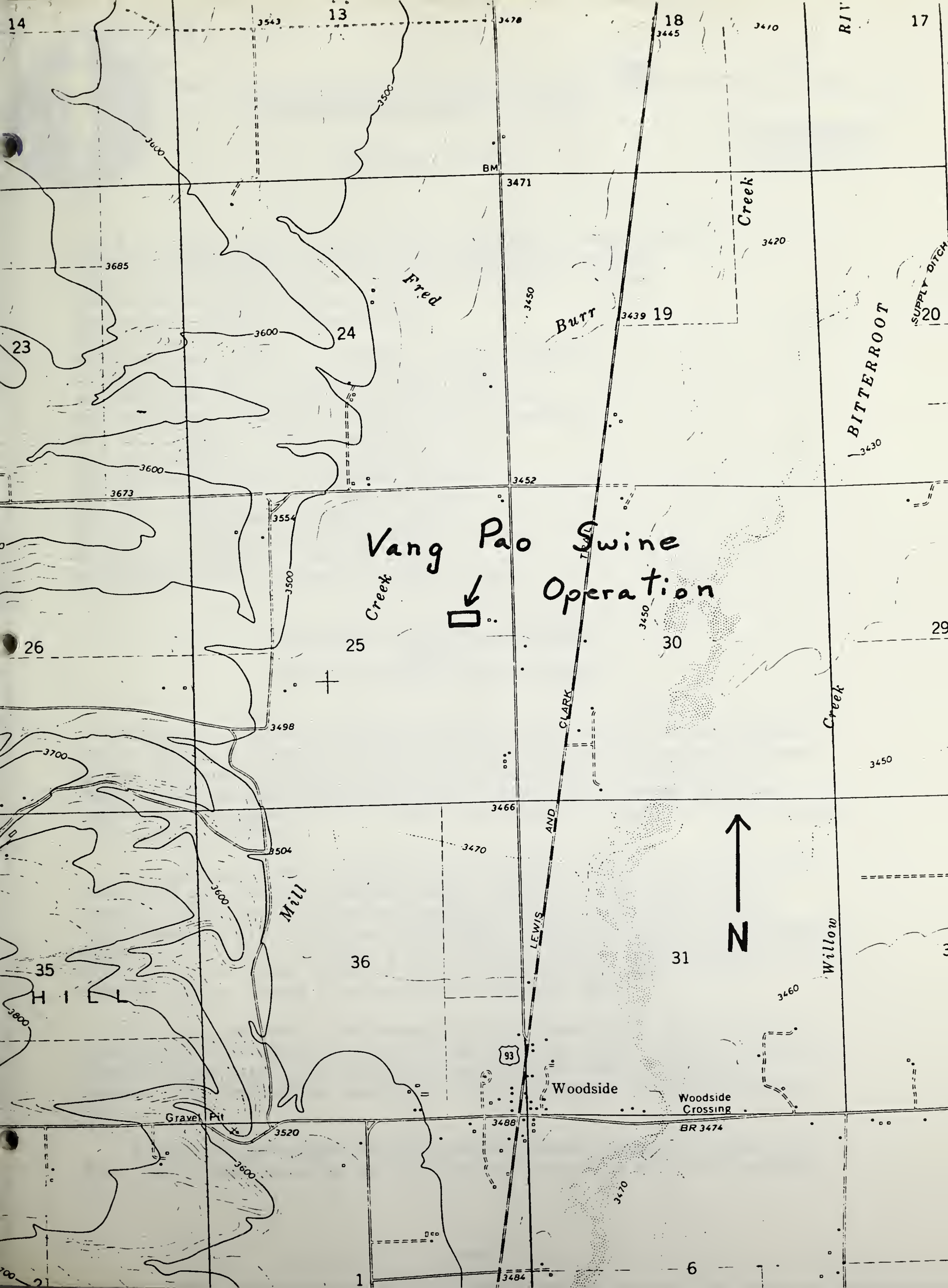
Any animal confinement facility can have an effect on the surrounding environment. Adverse effects can, however, be minimized through implementation of a good waste management program. Odors around an animal confinement facility such as being proposed here can be minimized through good housekeeping within the confinement buildings. Major periods of odors are associated with the spreading of the liquid manure onto adjacent croplands. Mixing with irrigation water during the summer months and incorporation with the soil during spring and fall should significantly minimize the extent and duration of those odors. Flies around the animal confinement facility will be controlled through routine baiting and spraying programs. Dead animals will be disposed of by burning in a proper incinerator.

While zoning does not currently exist for the area proposed to be used as an animal confinement facility, previous contacts with the local planning agency have indicated the area is agricultural in nature. There are no known historical or archaeological sites which would in any way be affected by the proposed operation. If the waste management program as outlined in this preliminary environmental review is adhered to, problems associated with animal confinement facilities should be eliminated or significantly minimized.

Secondary and social impact due to the proposed action should be minimal due to the fact that the area is utilized primarily for agricultural production.

Steven L Pilcher by vf
Steven L. Pilcher
Water Quality Bureau
Environmental Sciences Division

SLP:vlf
Attachment
cc: Ben Wake
Air Quality Bureau


Vang Pao Swine Operation

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Sept.2,'76

Department of Health and Environmental Sciences
STATE OF MONTANA HELENA, MONTANA 59601

John S. Anderson M.D.
DIRECTOR
A. C. Knight, M. D., F. C. C. P.
ACTING DIRECTOR

September 2, 1976

Board of County Commissioners, Ravalli County Courthouse, Hamilton
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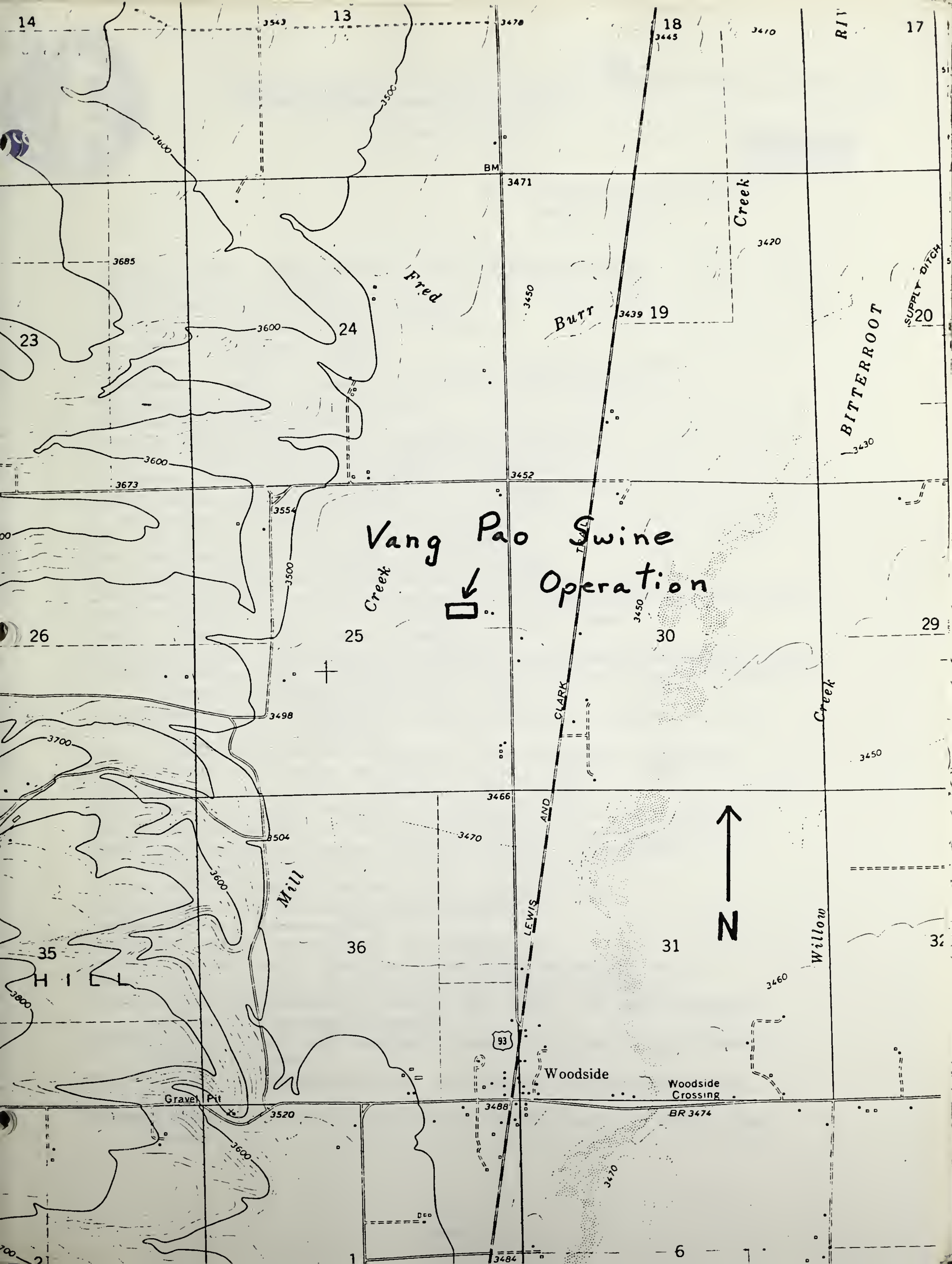
Steven L Pilcher by vlf
Steven L. Pilcher
Water Quality Bureau
Environmental Sciences Division

SLP:vlf
Attachment
cc: Ben Wake
Air Quality Bureau


Vang Pao Swine Operation
N
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Woodside Crossing
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Gravel Pit
Fred Burr Creek
Mill Creek
Willow Creek
BITTERROOT
SUPPLY DITCH
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Department of Health and Environmental Sciences
STATE OF MONTANA HELENA, MONTANA 59601

~~John S. Anderson M.D.
DIRECTOR~~
A. C. KNIGHT, M. D.
ACTING DIRECTOR

August 31, 1976

Re: Bitterroot Horizons 1976
Ravalli County

Honorable Thomas Judge, Governor, State of Montana, Helena
Citizens Advocate, Helena
Environmental Quality Council, Helena
Montana Fish and Game Department, Helena
Department of Highways, Helena
Department of Community Affairs, Division of Planning, Helena
Department of Natural Resources and Conservation, Helena
Department of State Lands, Helena
Montana State Library, Helena
Board of County Commissioners, Courthouse, Hamilton
City-County Planning Board, Courthouse, Hamilton
Sanitarian, Chuck Stahl, Courthouse - Box 5019, Hamilton
Environmental Information Center, Box 12, Helena
C. W. Gonder, 823 East Call Street, Livingston
Mrs. Vel Jansen, 430 South Sixth, Livingston
Mrs. Winifred Lucky, 420 South Sixth, Livingston
Mary Lee Reese, League of Women Voters, 29 South Alta, Helena
Tom Horobik, Pres., Montana Wilderness Assn., 4000 4th Ave. N., Great Falls
Northern Rockies Action Group, #9 Placer Street, Helena
Paul T. Richards, 1836 Floweree, Helena
John Schillinger, Microbiology Department, Montana State University, Bozeman
Concerned Citizens for a Quality Environment, c/o Ron Erickson, Chairman,
University of Montana, Missoula
Student Environmental Research Center, University of Montana, Room 212,
Venture Center, Missoula
John P. Duke, Assistant Vice President, Land Management, Burlington
Northern, 650 Central Building, Seattle, Washington, 98104
Herb Anderson, P. O. Box 42, Raynesford, MT 59469
Mike Roach, Air Quality Bureau, Environmental Sciences Division
Don Willems, Water Quality Bureau, Environmental Sciences Division
State-Local Relations Project, Commission on Local Government,
State Capitol, Helena
J. Anne Skinner, Public Information Unit, DHES, Helena
Hugh Schaefer, 206 Ben Hogan Drive, Missoula
Jerome Borkoski, Stevensville
Northwest Tribune, Main Street, Stevensville
Audubon Society, Attn: Sam Sperry, 1823 Highland Avenue, Helena
Ducks Unlimited, Attn: Patrick McDonough, Box 327, Billings
Montana Cooperative Wildlife Research Unit, Attn: Dr. John Craighead,
University of Montana, Missoula
Montana Outfitter and Dude Ranchers Association, Attn: Glen Childers,
7-B Ranch, Brusett
Montana Wildlife Federation, Attn: Don Aldrich, 410 Woodworth Ave.,
Missoula
Montana Women's Polictical Caucus, Attn: Elenor Pratt, 1434 South 3rd,
Bozeman

Montana Woolgrowers Association, Box 1693, Helena
Sierra Club, Attn: Joe Angell, General Delivery, Helena
Trout Unlimited, Attn: Jim Handley, Box 140, Manhattan
Wilderness Society, Attn: Bill Cunningham, Box 12, Helena

Ladies & Gentlemen:

The enclosed preliminary environmental review has been prepared for Bitterroot Horizons 1976 in Ravalli County. This environmental review is submitted for your consideration. Comments and questions will be accepted for 15 days following issuance of this statement at which time it will be assumed that the persons or agencies consulted have no comments to make. One extension of time not to exceed seven (7) days will be granted upon request if there is sufficient reason for said request. All comments should be sent to the undersigned.

Sincerely yours,

Edward W. Casne

Edward W. Casne, Chief
Subdivision Bureau
Environmental Sciences Division
Phone: 449-3946

EWC:DV:ti
Enclosure
cc: Ben Wake
Tom Ellerhoff
Terry Carmody

PRELIMINARY ENVIRONMENTAL REVIEW
BITTERROOT HORIZONS 1976
(St. Mary's Horizon Village)

INTRODUCTION:

The developer, Jerome Borkoski of the Bitterroot Horizons 1976 (St. Mary's Horizon Village) in Stevensville, proposes to develop a community shopping center in conjunction with a residential development. The residential development, which will consist of 33 single bedroom units in either 4-plexes or 5-plexes, has been reviewed and is not considered in this environmental review.

The proposed commercial development would consist of an enclosed mall that would be developed in two stages. Based on studies and projections of probable demand, the following describes the type of businesses that likely would occupy the premises and space alloted to each.

St. Mary's Horizon Village Tenant Mix

PHASE I	Sq. Feet
Supermarket	20,700
Variety Store	12,000
Drug Store	6,000
	38,700
Pad 1 Family Rest ***	3,000
Pad 2 Donut Shop **	2,000
	43,700
Mall Shops	
Shoe	1,500
Dress Shops (2)	3,800
Mens Store (1)	2,200
Jeweler	1,100
Cheese Shop	1,400
Childrens Wear	2,000
Dry Cleaner/Tailor	900
Florist	750
Leather Goods	800
Barber Shop (2 chairs)	375
Beauty Parlor (6 chairs)	1,500
Ice Cream/Candy Parlor *	2,600
Hallmark Card/Gift	5,000
Health Food Store	800
Key/Lock Shop	300

Gift Shops (2)	2,675
Fabric/Sewing Center	2,750
Catalog Store	3,200
Sub-total	33,650
Total (25 Shops)	77,350 sq. ft.

*** Family Restaurant seating 86
** Donut Shop Seating 30
* Ice Cream/Candy Parlor seating 35

Public restrooms will be included

PHASE II	Sq. Feet
Junior Dept. Store	20,250
Twin Cinema*	9,245
Dress Shop (1)	1,900
Mens Shop (1)	2,200
Childrens (1)	1,680
Amusement Center	1,500
Music/Record Center	2,100
Homecenter/Sporting	3,775
	42,650
Phase I	77,350
Phase I & II	120,000

Shops: 33

* Twin Cinema seating:

Cinema 1 -	299
Cinema 2 -	299
Total	598

The area would front on Highway 93 in the area identified in the attached drawing as tract 1. The development would be located on currently unused land immediately south of the Kootenai Lodge and Motel, and west of the Fort Owen Inn restaurant. The development would include a total of 504 parking spaces in approximately six acres of asphalt parking area.

A commercial trash hauler would remove solid waste from the development for disposal in an approved landfill. Water supply would be through a central system supplied by wells. Sewage disposal would be through septic tanks and drainfields sized and designed to handle the load.

The apparent environmental impact appears negligible, so no environmental impact statement will be prepared.

If developed as planned, the commercial center would employ a total of 150 persons upon completion of both phases. Estimated annual payroll would be $1,315,000 per year.

Construction probably would not start before the fall of 1977 according to the developer.

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

1. Terrestrial and Aquatic Life and Habitats:

   Water supply will be from wells and there will be no surface water use. Septic tank drainfields will be located far enough from surface waters to prevent contamination.

2. Water Quality, Quantity Distribution and Sewage Disposal:

   Sewage is to be treated by means of two centralized septic tank and drainfield systems. One for the residential area and one for the commerical area. Soil profiles and percolations tests have been taken in the drainfield areas and it appears that there will be no problems with contamination of the groundwater or creation of a public nuisance. Adequate areas are available for each drainfield.

   Water for this development is to be obtained from a centralized water system utilizing deep wells. The quantity and quality of water available in the aquifer is adequate from evidence obtained from other wells in the area.

   The construction of a large paved parking area and the large buildings will increase the amount of storm water runoff from the area. There will be a need for storm drainage plans to detain storm runoff before it reaches Kootenai Creek to allow settlement of silt, etc. There seems to be adequate room to construct settling ponds if necessary and the storm runoff volume should not adversely affect the stream.

3. Soil Quality, Stability and Moisture:

   The soil impacted in this case will be covered by parking area and commercial development.

4. Vegetation Cover, Quanitity and Quality:

   The land currently is covered with weeds and native grasses.

5. Aesthetics:

   The developer plans a high quality, attractive commercial area. If this plan is carried out, the negative esthetic impact could be the least possible for such a development.

6. Air Quality:

Air quality may improve somewhat if the development fulfills the goal of preventing Ravalli County people from driving to Missoula to do their shopping.

7. Unique, Endangered, Fragile, or Limited Environmental Resources:

None known.

8. Demands on Environmental Resources of Land, Water, Air and Energy:

The energy demand will be substantial. If the development is completed in two phases totalling 120,000 square feet as projected and if the heat is electric, the development could use up to 1.2 mw, according to a Montana Power spokesman. The type of heating to be used has not yet been decided, and the developers are investigating the feasibility of solar heating to partially furnish the heating needs.

The development would save some gasoline if people from Ravalli County shopped there instead of in Missoula.

The two phases of the development would occupy approximately three areas, with another six acres of parking lot. This land would be permanently lost from production. Water use is calculated at approximately 24,000 gallons per day, which should not cause any impacts on water resources.

9. Historical and Archaeological sites:

None known.

POTENTIAL IMPACTS ON HUMAN POPULATION

1. Social Structures and Mores:

This development would have no predictable effect on social structures and mores.

2. Cultural Uniqueness and Diversity:

No known effect.

3. Local and State Tax Base and Tax Revenue:

The developer said the plot of land being developed last year cost him $107 in property tax. Figures from the Ravalli County assessor's office indicate that if the shopping center were built as projected, property taxes under the current levies would vary from approximately $36,000 per year to $40,000 per year, depending on the value of the facilities. Income taxes from the expected $1,315,000 annual payroll would be substantial.

4. There would be no impact on agricultural production.

5. Human Health:

   There would be no forseeable effect on human health.

6. The quantity and distribution of community and personal income would be subject to substantial impacts. The relatively large payroll and the shopping facilities would tend to keep more retail dollars in Ravalli County, as hoped by the developer. At present many residents of the area do their shopping in Missoula.

7. Access and quality of wilderness and recreational activities should not be impacted.

8. The quantity and distribution of employment would be altered considerably. The developer cites studies and other indications that many people who already live in the vicinity of the project would seek work there rather than commute to work in Missoula, the nearest source of large scale employment.

9. The distribution and density of population and housing would be subject to unpredicatble change. It seems assured that there would be some move by families to relocate near such a center, but whether it would be economically and environmentally feasible to make such a move is unknown. Prospective changes in population density and distribution therefore remain obscure.

   Ravalli County Planner John Boland said there probably would not be sufficient existing housing in Stevensville to accommodate any substantial population increase. He said that because of a relatively high population turnover in northern Ravalli County, Stevensville probably has a vacancy rate of approximately one per cent.

10. Demands for governmental services probably will be minimal. If low quality subdivisions were attracted by the development there could be come increase in the demand for police protection. Fire protection will be through the local volunteer fire department, and the fire house will be located on the premises.

    If local population increases, there could be some impact on the school. The school superintendent in Stevensville said the school could easily accommodate up to 100 each high school and junior high students and 50 elementary students. The additional costs would amount to $918 for each high school student, $750 for each junior high students and $720 for each elementary student. The costs would be borne by the State, he said.

11. Industrial and commercial activity would be the major changes brought by this development. The commercial area was conceived with the idea of changing people's buying habits to keep Ravalli County dollars in the County rather than exporting them to Missoula.

Thus there could be a slight decline in Missoula's commercial activity if the development achieved its aim.

12. Demands for energy would be considerable. See number 8 in first part above.

13. Locally adopted environmental plans and goals:

    There is no zoning in the area of the development. The plans for the residential area have been approved by both the County Planning Board and the County Commissioners. The plans for the commercial area have not been reviewed to date.

14. Transportation networks and traffic flows would experience noticeable changes. Traffic would increase in the area of the development; decrease between Stevensville and Missoula.

ALTERNATIVES

(1) Approve the development without preparation of an environmental impact statement after the following conditions have been met:

    (a) Finalized water supply and sewerage plans and specifications are submitted and approved by this department.

    (b) Plans for a storm water control system are submitted and approved by this department.

    (c) When developing the subdivision the developer shall abide by the provisions of the Certificate of Plat Approval and by the Department of Health and Environmental Sciences and Ravalli County Health Department regulations pertaining to water supply, sewage disposal and solid waste disposal.

(2) Write an environmental impact statement prior to further consideration of approval.

(3) Disapprove the development as proposed.

RECOMMENDATIONS:

The Department of Health and Environmental Sciences recommends the first alternative. In the event condition (c) is not met, this department will seek legal action under the provisions of Section 69-5007 and 69-5008 R.C.M. 1947.

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Department of Health and Environmental Sciences
STATE OF MONTANA HELENA, MONTANA 59601

John S. Anderson M.D.
DIRECTOR
A. C. KNIGHT, M. D.
ACTING DIRECTOR

August 31, 1976

Re: Bitterroot Horizons 1976
Ravalli County

Honorable Thomas Judge, Governor, State of Montana, Helena
Citizens Advocate, Helena
Environmental Quality Council, Helena
Montana Fish and Game Department, Helena
Department of Highways, Helena
Department of Community Affairs, Division of Planning, Helena
Department of Natural Resources and Conservation, Helena
Department of State Lands, Helena
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Mary Lee Reese, League of Women Voters, 29 South Alta, Helena
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Northern Rockies Action Group, #9 Placer Street, Helena
Paul T. Richards, 1836 Floweree, Helena
John Schillinger, Microbiology Department, Montana State University, Bozeman
Concerned Citizens for a Quality Environment, c/o Ron Erickson, Chairman,
University of Montana, Missoula
Student Environmental Research Center, University of Montana, Room 212,
Venture Center, Missoula
John P. Duke, Assistant Vice President, Land Management, Burlington
Northern, 650 Central Building, Seattle, Washington, 98104
Herb Anderson, P. O. Box 42, Raynesford, MT 59469
Mike Roach, Air Quality Bureau, Environmental Sciences Division
Don Willems, Water Quality Bureau, Environmental Sciences Division
State-Local Relations Project, Commission on Local Government,
State Capitol, Helena
J. Anne Skinner, Public Information Unit, DHES, Helena
Hugh Schaefer, 206 Ben Hogan Drive, Missoula
Jerome Borkoski, Stevensville
Northwest Tribune, Main Street, Stevensville
Audubon Society, Attn: Sam Sperry, 1823 Highland Avenue, Helena
Ducks Unlimited, Attn: Patrick McDonough, Box 327, Billings
Montana Cooperative Wildlife Research Unit, Attn: Dr. John Craighead,
University of Montana, Missoula
Montana Outfitter and Dude Ranchers Association, Attn: Glen Childers,
7-B Ranch, Brusett
Montana Wildlife Federation, Attn: Don Aldrich, 410 Woodworth Ave.,
Missoula
Montana Women's Polictical Caucus, Attn: Elenor Pratt, 1434 South 3rd,
Bozeman

Montana Woolgrowers Association, Box 1693, Helena
Sierra Club, Attn: Joe Angell, General Delivery, Helena
Trout Unlimited, Attn: Jim Handley, Box 140, Manhattan
Wilderness Society, Attn: Bill Cunningham, Box 12, Helena

Ladies & Gentlemen:

The enclosed preliminary environmental review has been prepared for Bitterroot Horizons 1976 in Ravalli County. This environmental review is submitted for your consideration. Comments and questions will be accepted for 15 days following issuance of this statement at which time it will be assumed that the persons or agencies consulted have no comments to make. One extension of time not to exceed seven (7) days will be granted upon request if there is sufficient reason for said request. All comments should be sent to the undersigned.

Sincerely yours,

Edward W. Casne

Edward W. Casne, Chief
Subdivision Bureau
Environmental Sciences Division
Phone: 449-3946

EWC:DV:ti
Enclosure
cc: Ben Wake
    Tom Ellerhoff
    Terry Carmody

PRELIMINARY ENVIRONMENTAL REVIEW
BITTERROOT HORIZONS 1976
(St. Mary's Horizon Village)

INTRODUCTION:

The developer, Jerome Borkoski of the Bitterroot Horizons 1976 (St. Mary's Horizon Village) in Stevensville, proposes to develop a community shopping center in conjunction with a residential development. The residential development, which will consist of 33 single bedroom units in either 4-plexes or 5-plexes, has been reviewed and is not considered in this environmental review.

The proposed commercial development would consist of an enclosed mall that would be developed in two stages. Based on studies and projections of probable demand, the following describes the type of businesses that likely would occupy the premises and space alloted to each.

St. Mary's Horizon Village Tenant Mix

PHASE I	Sq. Feet
Supermarket	20,700
Variety Store	12,000
Drug Store	6,000
	38,700
Pad 1 Family Rest ***	3,000
Pad 2 Donut Shop **	2,000
	43,700
Mall Shops	
Shoe	1,500
Dress Shops (2)	3,800
Mens Store (1)	2,200
Jeweler	1,100
Cheese Shop	1,400
Childrens Wear	2,000
Dry Cleaner/Tailor	900
Florist	750
Leather Goods	800
Barber Shop (2 chairs)	375
Beauty Parlor (6 chairs)	1,500
Ice Cream/Candy Parlor *	2,600
Hallmark Card/Gift	5,000
Health Food Store	800
Key/Lock Shop	300

Gift Shops (2)	2,675
Fabric/Sewing Center	2,750
Catalog Store	3,200
Sub-total	33,650
Total (25 Shops)	77,350 sq. ft.

*** Family Restaurant seating 86
** Donut Shop Seating 30
* Ice Cream/Candy Parlor seating 35

Public restrooms will be included

PHASE II	Sq. Feet
Junior Dept. Store	20,250
Twin Cinema*	9,245
Dress Shop (1)	1,900
Mens Shop (1)	2,200
Childrens (1)	1,680
Amusement Center	1,500
Music/Record Center	2,100
Homecenter/Sporting	3,775
	42,650
Phase I	77,350
Phase I & II	120,000

Shops: 33

* Twin Cinema seating:
Cinema 1 - 299
Cinema 2 - 299
Total 598

The area would front on Highway 93 in the area identified in the attached drawing as tract 1. The development would be located on currently unused land immediately south of the Kootenai Lodge and Motel, and west of the Fort Owen Inn restaurant. The development would include a total of 504 parking spaces in approximately six acres of asphalt parking area.

A commercial trash hauler would remove solid waste from the development for disposal in an approved landfill. Water supply would be through a central system supplied by wells. Sewage disposal would be through septic tanks and drainfields sized and designed to handle the load.

The apparent environmental impact appears negligible, so no environmental impact statement will be prepared.

If developed as planned, the commercial center would employ a total of 150 persons upon completion of both phases. Estimated annual payroll would be $1,315,000 per year.

Construction probably would not start before the fall of 1977 according to the developer.

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

1. Terrestrial and Aquatic Life and Habitats:

   Water supply will be from wells and there will be no surface water use. Septic tank drainfields will be located far enough from surface waters to prevent contamination.

2. Water Quality, Quantity Distribution and Sewage Disposal:

   Sewage is to be treated by means of two centralized septic tank and drainfield systems. One for the residential area and one for the commerical area. Soil profiles and percolations tests have been taken in the drainfield areas and it appears that there will be no problems with contamination of the groundwater or creation of a public nuisance. Adequate areas are available for each drainfield.

   Water for this development is to be obtained from a centralized water system utilizing deep wells. The quantity and quality of water available in the aquifer is adequate from evidence obtained from other wells in the area.

   The construction of a large paved parking area and the large buildings will increase the amount of storm water runoff from the area. There will be a need for storm drainage plans to detain storm runoff before it reaches Kootenai Creek to allow settlement of silt, etc. There seems to be adequate room to construct settling ponds if necessary and the storm runoff volume should not adversely affect the stream.

3. Soil Quality, Stability and Moisture:

   The soil impacted in this case will be covered by parking area and commercial development.

4. Vegetation Cover, Quanitity and Quality:

   The land currently is covered with weeds and native grasses.

5. Aesthetics:

   The developer plans a high quality, attractive commercial area. If this plan is carried out, the negative esthetic impact could be the least possible for such a development.

6. Air Quality:

Air quality may improve somewhat if the development fulfills the goal of preventing Ravalli County people from driving to Missoula to do their shopping.

7. Unique, Endangered, Fragile, or Limited Environmental Resources:

None known.

8. Demands on Environmental Resources of Land, Water, Air and Energy:

The energy demand will be substantial. If the development is completed in two phases totalling 120,000 square feet as projected and if the heat is electric, the development could use up to 1.2 mw, according to a Montana Power spokesman. The type of heating to be used has not yet been decided, and the developers are investigating the feasibility of solar heating to partially furnish the heating needs.

The development would save some gasoline if people from Ravalli County shopped there instead of in Missoula.

The two phases of the development would occupy approximately three areas, with another six acres of parking lot. This land would be permanently lost from production. Water use is calculated at approximately 24,000 gallons per day, which should not cause any impacts on water resources.

9. Historical and Archaeological sites:

None known.

POTENTIAL IMPACTS ON HUMAN POPULATION

1. Social Structures and Mores:

This development would have no predictable effect on social structures and mores.

2. Cultural Uniqueness and Diversity:

No known effect.

3. Local and State Tax Base and Tax Revenue:

The developer said the plot of land being developed last year cost him $107 in property tax. Figures from the Ravalli County assessor's office indicate that if the shopping center were built as projected, property taxes under the current levies would vary from approximately $36,000 per year to $40,000 per year, depending on the value of the facilities. Income taxes from the expected $1,315,000 annual payroll would be substantial.

4. There would be no impact on agricultural production.

5. Human Health:

   There would be no forseeable effect on human health.

6. The quantity and distribution of community and personal income would be subject to substantial impacts. The relatively large payroll and the shopping facilities would tend to keep more retail dollars in Ravalli County, as hoped by the developer. At present many residents of the area do their shopping in Missoula.

7. Access and quality of wilderness and recreational activities should not be impacted.

8. The quantity and distribution of employment would be altered considerably. The developer cites studies and other indications that many people who already live in the vicinity of the project would seek work there rather than commute to work in Missoula, the nearest source of large scale employment.

9. The distribution and density of population and housing would be subject to unpredicatble change. It seems assured that there would be some move by families to relocate near such a center, but whether it would be economically and environmentally feasible to make such a move is unknown. Prospective changes in population density and distribution therefore remain obscure.

   Ravalli County Planner John Boland said there probably would not be sufficient existing housing in Stevensville to accommodate any substantial population increase. He said that because of a relatively high population turnover in northern Ravalli County, Stevensville probably has a vacancy rate of approximately one per cent.

10. Demands for governmental services probably will be minimal. If low quality subdivisions were attracted by the development there could be come increase in the demand for police protection. Fire protection will be through the local volunteer fire department, and the fire house will be located on the premises.

    If local population increases, there could be some impact on the school. The school superintendent in Stevensville said the school could easily accommodate up to 100 each high school and junior high students and 50 elementary students. The additional costs would amount to $918 for each high school student, $750 for each junior high students and $720 for each elementary student. The costs would be borne by the State, he said.

11. Industrial and commercial activity would be the major changes brought by this development. The commercial area was conceived with the idea of changing people's buying habits to keep Ravalli County dollars in the County rather than exporting them to Missoula.

Thus there could be a slight decline in Missoula's commercial activity if the development achieved its aim.

12. Demands for energy would be considerable. See number 8 in first part above.

13. Locally adopted environmental plans and goals:

    There is no zoning in the area of the development. The plans for the residential area have been approved by both the County Planning Board and the County Commissioners. The plans for the commercial area have not been reviewed to date.

14. Transportation networks and traffic flows would experience noticeable changes. Traffic would increase in the area of the development; decrease between Stevensville and Missoula.

ALTERNATIVES

(1) Approve the development without preparation of an environmental impact statement after the following conditions have been met:

  (a) Finalized water supply and sewerage plans and specifications are submitted and approved by this department.

  (b) Plans for a storm water control system are submitted and approved by this department.

  (c) When developing the subdivision the developer shall abide by the provisions of the Certificate of Plat Approval and by the Department of Health and Environmental Sciences and Ravalli County Health Department regulations pertaining to water supply, sewage disposal and solid waste disposal.

(2) Write an environmental impact statement prior to further consideration of approval.

(3) Disapprove the development as proposed.

RECOMMENDATIONS:

The Department of Health and Environmental Sciences recommends the first alternative. In the event condition (c) is not met, this department will seek legal action under the provisions of Section 69-5007 and 69-5008 R.C.M. 1947.

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Department of Health and Environmental Sciences
STATE OF MONTANA HELENA, MONTANA 59601

~~John S. Anderson M.D.
DIRECTOR~~
A. C. Knight, M. D., F. C. C. P.
ACTING DIRECTOR

May 21, 1976

STATE DOCUMENTS

MAY 24 1976

√ State Library, Helena
Board of County Commissioners, Dawson County Courthouse, Glendive
City-County Planning Board, Dawson County Courthouse, Glendive
Mr. John Geach, County Sanitarian, Box 281, Glendive
Environmental Quality Council, Helena
Department of Fish and Game, Helena
Mr. George Michels, CB Route, Glendive
Mr. Fred Kutzler, CB Route, Glendive
Mr. Gordon Mills, CB Route, Glendive
Mr. Ed Scherman, CB Route, Glendive
Mr. George Kutzler, CB Route, Glendive
Mr. Howard Kinsey, CB Route, Glendive
Mr. Jack Wyse, CB Route, Glendive
Mr. John Moore, CB Route, Glendive
Mr. Harvey Graber, River Road, Glendive
Mr. John Athas, River Road, Glendive
Elaine Wilkins, River Road, Glendive

PRELIMINARY ENVIRONMENTAL REVIEW FOR THE GEOMIKE ENTERPRISES, INC.

Pursuant to the Montana Administrative Code, Section 16-2.2(2)-P2030 (Rule IV), the following preliminary environmental review has been prepared by the Department of Health and Environmental Sciences concerning the Geomike Enterprises, Inc. and a request by Mr. George Michels for a waste discharge permit for the proposed dairy operation located southwest of Glendive, Montana.

The purpose of this preliminary environmental review is to inform all interested governmental agencies, public groups, or individuals of the proposed action and to determine whether or not the action may have a significant effect on the human environment. This preliminary environmental review will be circulated for a period of ten days at which time a decision will be made as to our further action. If you care to comment on this proposed action, please do so within that allotted time.

The proposed animal confinement facility around which this action is centered is located in Sec. 33, T. 16 N., R. 55 E., of Dawson County. This site was at one time utilized for a dairy operation but has not been active for about 10 years.

Geomike Enterprises, Inc. proposes to operate a dairy facility having capacity for a total of approximately 60 cows. The livestock associated

with this operation would be totally confined within an enclosed building. The waste material which would be generated by the livestock held in confinement will drop through slatted floors into a concrete liquid manure pit. This liquid manure pit will have capacity for approximately 400,000 gallons of waste material which constitutes approximately 6 months wastewater production including livestock waste and water used in flushing. The waste material which accumulates within this waste control facility will be removed at least twice each year and disposed of on adjacent agricultural land. Mr. Michels owns approximately 40 acres of such land, but should waste disposal not coincide with cropping practices on that property, adjacent landowners have indicated an interest in obtaining this waste material. The material would then be utilized for its nutrient value by the crops that are grown with little, if any, detrimental effects to either the soil or the growing crops.

Any animal confinement facility such as this will have an effect on the surrounding environment, but adverse environmental effects can be minimized through adherence to a good waste management program. As previously stated, all wastewater will be contained in the liquid manure pit and should be, therefore, prevented from reaching state waters. If the waste control facilities proposed in the application for permit are constructed and the waste management program strictly adhered to, the problems of environmental degradation should be minimal. Short periods of odor could occur during times when the waste material is removed from the liquid manure pit and disposed of on the agricultural land. The extent and duration of those odors can be minimized through proper application by spreading in a thin layer on the land and by incorporation with the soil whenever cropping practices will allow.

Flies around the animal confinement facility will be controlled through the use of electrocuters. Dead animals will be disposed of through local rendering services. There are no known historical or archaeological sites which would in any way be adversely affected by the proposed animal confinement facility. Likewise, there should be no unusual demands on other environmental resources. If the waste management program as outlined in this preliminary environmental review is adhered to, the problems associated with animal confinement facilities should be eliminated or significantly minimized. Secondary and social impact due to the proposed action is somewhat difficult to determine. A dairy operation of this size should generate additional revenue for the area; the exact amount of such an increase is difficult to predict. While the proposed action would not have a significant impact on the transportation network, it is possible that traffic flows in and around the animal confinement facility would increase slightly as raw materials are periodically hauled into the site and milk hauled to market.

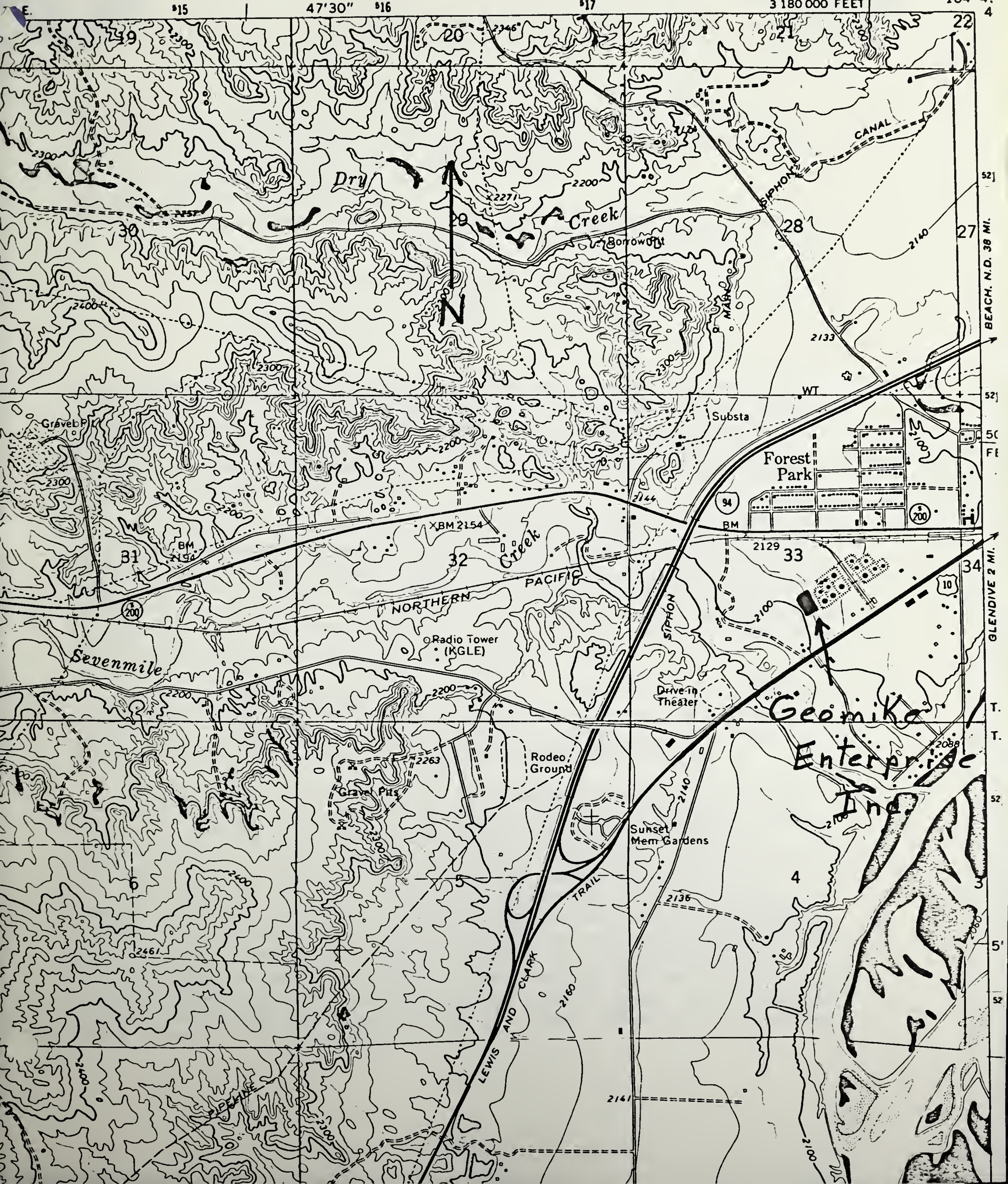
In summary, the overall impact of the proposed action should be significantly minimized due to the waste management program.

Steven L Pilcher by vf

Steven L. Pilcher
Water Quality Bureau
Environmental Sciences Division

cc: Ben Wake
Air Quality Bureau

FOREST PARK QUADRANGLE
MONTANA – DAWSON CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



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Aug.20,76

Department of Health and Environmental Sciences
STATE OF MONTANA HELENA, MONTANA 59601

John S. Anderson M.D.
DIRECTOR
A. C. Knight, M. D., F. C. C. P.
ACTING DIRECTOR

August 20, 1976

✓State Library, Helena
Board of County Commissioners, Sweet Grass County Courthouse, Big Timber
Ray Hedrick, R.S., Co. San., Box 109, Livingston
Environmental Quality Council, Helena
Department of Fish and Game, Helena
Mr. Richard A. Williams, Fairview Ranches, Inc., Melville, Montana 59055

PRELIMINARY ENVIRONMENTAL REVIEW FOR THE FAIRVIEW RANCHES, INC. BULL TEST STATION

Pursuant to the Montana Administrative Code, Section 16-2.2(2)-P2030 (Rule IV), the following preliminary environmental review has been prepared by the Department of Health and Environmental Sciences concerning the Bull Test Station, Fairview Ranches, Inc. and a request by Mr. Richard A. Williams for a waste discharge permit for that animal confinement facility located west of Melville, Montana.

The purpose of this preliminary environmental review is to inform all interested governmental agencies, public groups, or individuals of the proposed action and to determine whether or not the action may have a significant effect on the human environment. This preliminary environmental review will be circulated for a period of ten days at which time a decision will be made as to our future action. If you care to comment on this proposed action, please do so within that allotted time.

The animal confinement facility around which this action is centered is located in the NW¼, SW¼, Sec. 6, T. 4 N., R. 14 E., of Sweet Grass County, approximately six miles northwest of Melville, Montana. The approximate location of this facility is indicated on Figure No. 1.

Although livestock has been held in confinement at this location for many years, the Bull Test Station was just constructed in January of 1975. The current feeding area encompasses approximately 3.8 acres and has maximum capacity for approximately 350 head of livestock. The area is quite flat with slopes of less than one percent from north to south. Soil characteristics are a fine, sandy loam on the surface with a gravelly subsurface. Groundwater depth is relatively shallow and varies from eight to 12 feet. Surface runoff which would be generated from precipitation falling directly on the feeding area would be diverted into a retention pond. Extraneous drainage would be prevented from reaching the feeding area through a diking system. The waste control facility proposed would provide well in excess of the storage required to retain the runoff which could be expected from a 25-year, 24-hour rainfall event.

Due to the size of the waste control facility, the liquid which accumulates therein will be disposed of primarily through evaporation. Solid waste which might accumulate within the lagoon will periodically be removed by mechanical means and disposed of on adjacent agricultural land. Likewise, manure which accumulates within the feeding area will be periodically mounded and removed at least once each year for disposal on surrounding land. Approximately 3,000 acres of agricultural land is available for waste disposal. This material would then be utilized for its nutrient value by the crops that are being grown with little, if any, detrimental effects to either the soil or the growing crops.

Any animal confinement facility such as this will have an effect on the surrounding environment, but adverse environmental effects can be minimized through adherence to a good waste management program. As previously stated, the surface runoff would be adequately prevented from reaching state waters. Due to the relatively high groundwater table, the waste control facility will be lined with an impervious clay liner to prevent contamination of the groundwater.

Flies around the animal confinement facility will be controlled through a periodic spraying program. Dead animals will be disposed of through the services of a local rendering company.

The entire area surrounding the site of this animal confinement facility is utilized primarily for agricultural production. There are no known historical or archaeological sites which would in any way be affected by the operation. Since the facility is in existence as of this time there should be no unusual demands placed on other environmental resources. If the waste management program as outlined in this preliminary environmental review is adhered to, the problems associated with animal confinement facilities should be eliminated or significantly minimized.

Secondary and social impact due to the proposed action should be minimal due to the fact that the area has been used for quite some time as an animal confinement facility, and a change in use of the land would not occur.

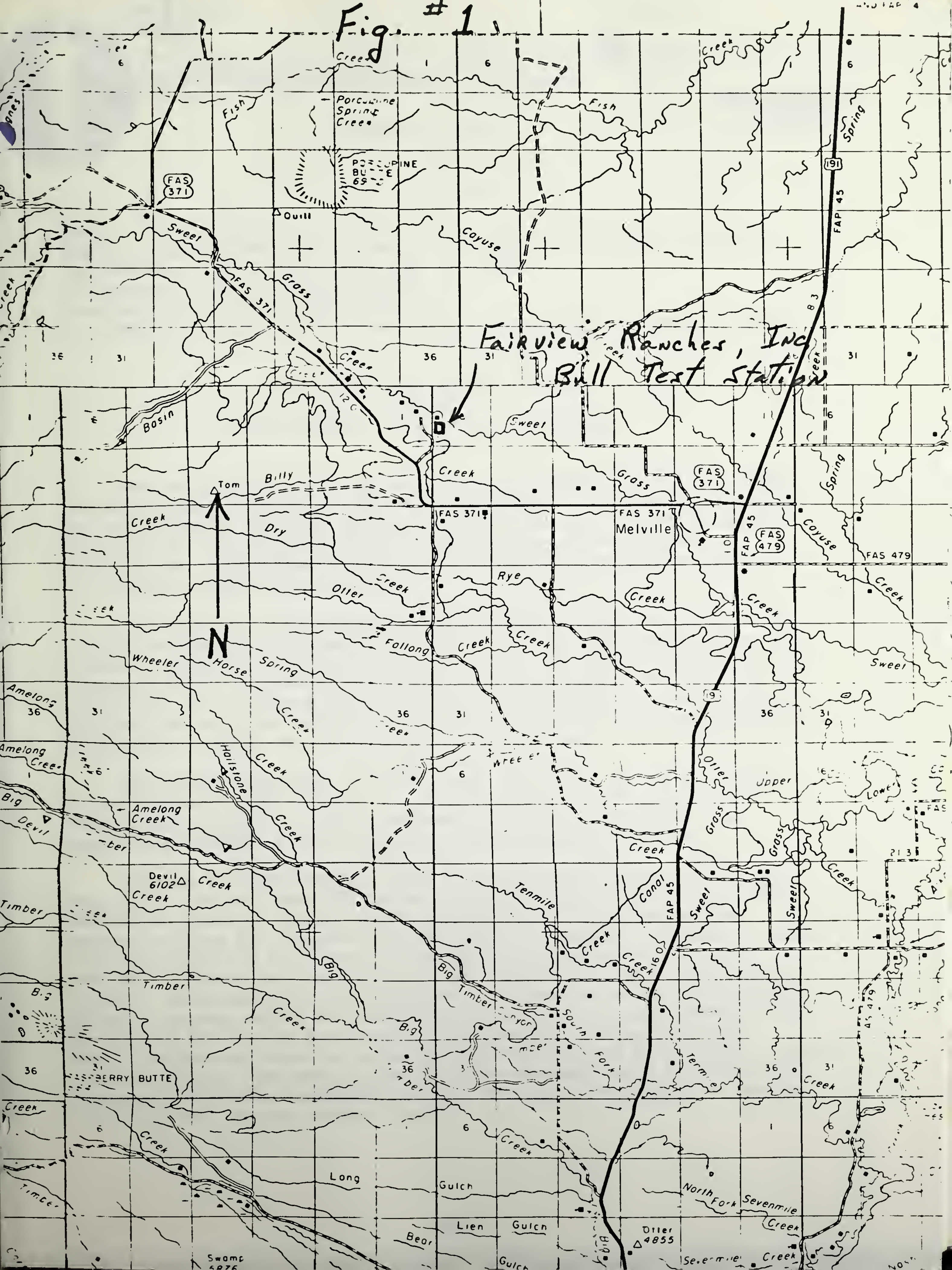
In summary, the overall impact of the proposed action is significantly minimized due to the fact that the site has been used for quite some time as an animal confinement facility and the waste management program proposed should adequately deal with anticipated problems.

Steven L. Pilcher

Steven L. Pilcher
Water Quality Bureau
Environmental Sciences Division

SLP:vlf
Enclosure
cc: Ben Wake
Air Quality Bureau

Fig. #1


Fairview Ranches, Inc
Bull Test Station
N
Porcupine Spring Creek
PORCUPINE BUTTE 6970
Quill
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FAP 45
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Fish
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Sweet Grass Creek
Basin
Tom
Billy Creek
Dry Creek
Otter Creek
Rye Creek
Fallong Creek
Melville
FAS 479
Wheeler
Horse Spring Creek
Amelong Creek
Hailstone Creek
Big Timber Creek
Devil Creek
Devil 6102
Timber Creek
Tenmile Creek
Canal
Upper
Lower
Spring
Big Timber Canyon
South Fork
RASPBERRY BUTTE
Long Gulch
Lien Gulch
Bear Gulch
North Fork Sevenmile Creek
Sevenmile Creek
Otter 4855
Swamp

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Department of Health and Environmental Sciences
STATE OF MONTANA HELENA, MONTANA 59601

John S. Anderson M.D.
DIRECTOR
A. C. Knight, M. D., F. C. C. P.
ACTING DIRECTOR

August 20, 1976

State Library, Helena
Board of County Commissioners, Sweet Grass County Courthouse, Big Timber
Ray Hedrick, R.S., Co. San., Box 109, Livingston
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Department of Fish and Game, Helena
Mr. Richard A. Williams, Fairview Ranches, Inc., Melville, Montana 59055

PRELIMINARY ENVIRONMENTAL REVIEW FOR THE FAIRVIEW RANCHES, INC. BULL TEST STATION

Pursuant to the Montana Administrative Code, Section 16-2.2(2)-P2030 (Rule IV), the following preliminary environmental review has been prepared by the Department of Health and Environmental Sciences concerning the Bull Test Station, Fairview Ranches, Inc. and a request by Mr. Richard A. Williams for a waste discharge permit for that animal confinement facility located west of Melville, Montana.

The purpose of this preliminary environmental review is to inform all interested governmental agencies, public groups, or individuals of the proposed action and to determine whether or not the action may have a significant effect on the human environment. This preliminary environmental review will be circulated for a period of ten days at which time a decision will be made as to our future action. If you care to comment on this proposed action, please do so within that allotted time.

The animal confinement facility around which this action is centered is located in the NW¼, SW¼, Sec. 6, T. 4 N., R. 14 E., of Sweet Grass County, approximately six miles northwest of Melville, Montana. The approximate location of this facility is indicated on Figure No. 1.

Although livestock has been held in confinement at this location for many years, the Bull Test Station was just constructed in January of 1975. The current feeding area encompasses approximately 3.8 acres and has maximum capacity for approximately 350 head of livestock. The area is quite flat with slopes of less than one percent from north to south. Soil characteristics are a fine, sandy loam on the surface with a gravelly subsurface. Groundwater depth is relatively shallow and varies from eight to 12 feet. Surface runoff which would be generated from precipitation falling directly on the feeding area would be diverted into a retention pond. Extraneous drainage would be prevented from reaching the feeding area through a diking system. The waste control facility proposed would provide well in excess of the storage required to retain the runoff which could be expected from a 25-year, 24-hour rainfall event.

Due to the size of the waste control facility, the liquid which accumulates therein will be disposed of primarily through evaporation. Solid waste which might accumulate within the lagoon will periodically be removed by mechanical means and disposed of on adjacent agricultural land. Likewise, manure which accumulates within the feeding area will be periodically mounded and removed at least once each year for disposal on surrounding land. Approximately 3,000 acres of agricultural land is available for waste disposal. This material would then be utilized for its nutrient value by the crops that are being grown with little, if any, detrimental effects to either the soil or the growing crops.

Any animal confinement facility such as this will have an effect on the surrounding environment, but adverse environmental effects can be minimized through adherence to a good waste management program. As previously stated, the surface runoff would be adequately prevented from reaching state waters. Due to the relatively high groundwater table, the waste control facility will be lined with an impervious clay liner to prevent contamination of the groundwater.

Flies around the animal confinement facility will be controlled through a periodic spraying program. Dead animals will be disposed of through the services of a local rendering company.

The entire area surrounding the site of this animal confinement facility is utilized primarily for agricultural production. There are no known historical or archaeological sites which would in any way be affected by the operation. Since the facility is in existence as of this time there should be no unusual demands placed on other environmental resources. If the waste management program as outlined in this preliminary environmental review is adhered to, the problems associated with animal confinement facilities should be eliminated or significantly minimized.

Secondary and social impact due to the proposed action should be minimal due to the fact that the area has been used for quite some time as an animal confinement facility, and a change in use of the land would not occur.

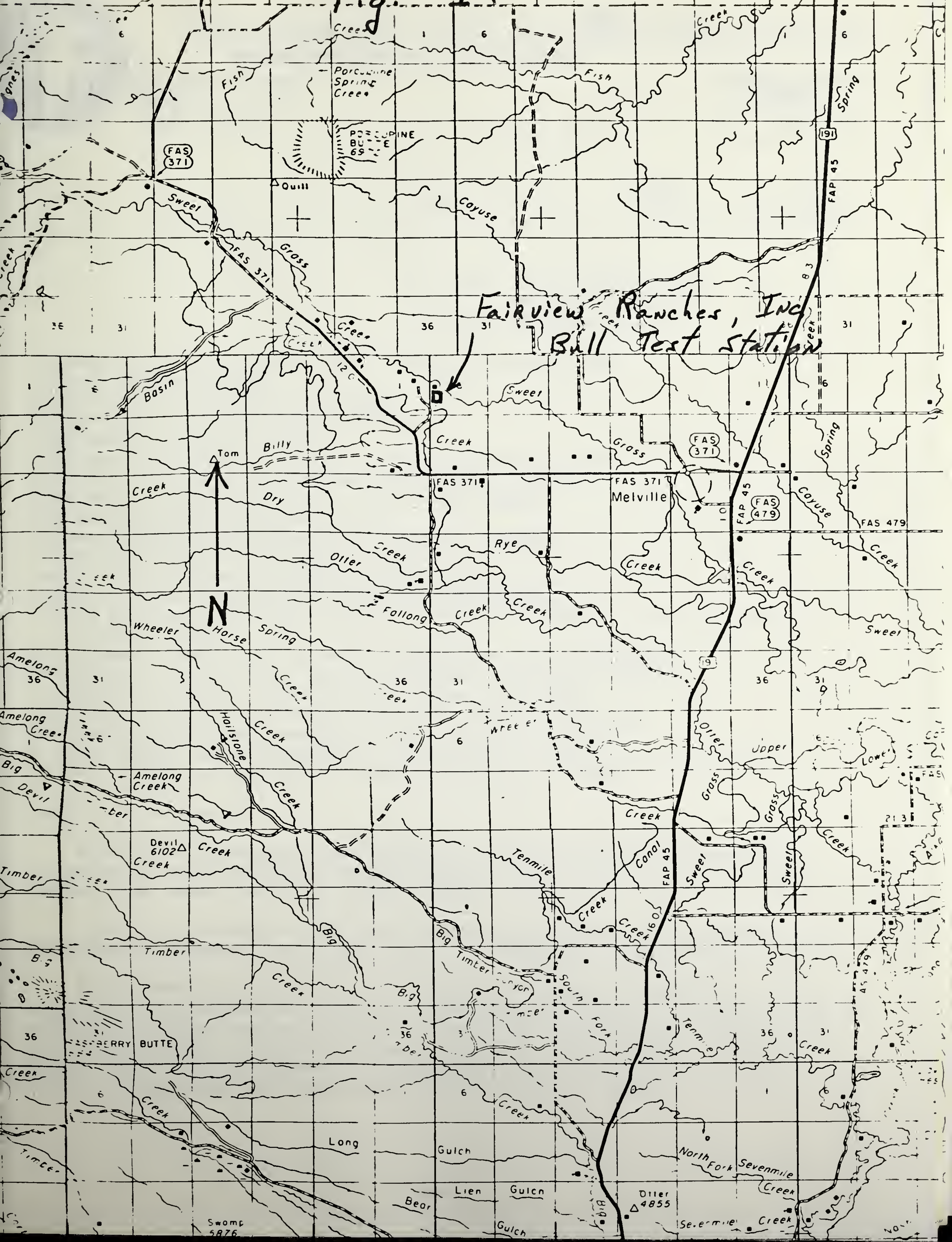
In summary, the overall impact of the proposed action is significantly minimized due to the fact that the site has been used for quite some time as an animal confinement facility and the waste management program proposed should adequately deal with anticipated problems.

Steven L. Pilcher

Steven L. Pilcher
Water Quality Bureau
Environmental Sciences Division

SLP:vlf
Enclosure
cc: Ben Wake
Air Quality Bureau

Fig. #1



Fairview Ranches, Inc
Bull Test Station

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Department of Health and Environmental Sciences
STATE OF MONTANA HELENA, MONTANA 59601

AIR QUALITY BUREAU
Cogswell Building
(406) 449-3454

~~John S. Anderson M.D.~~
DIRECTOR
A. C. Knight, M.D.
Acting Director

JUN 3 1976

June 3, 1976

STATE DOCUMENTS

Re: Great Western Sugar
Boiler Conversion
Billings, MT

The Honorable Thomas Judge, Governor, State of Montana, Helena
Citizens Advocate, Helena
Environmental Quality Council, Helena
Montana Fish and Game Department, Helena
Department of Highways, Helena
Department of Community Affairs, Division of Planning, Helena
Department of Natural Resources and Conservation, Helena
Department of State Lands, Attn: Brace Hayden, Helena
✓Montana State Library, Helena
Yellowstone County Commissioners, Courthouse, Billings
City-County Planner, Courthouse, Billings
Environmental Information Center, Box 12, Helena
Northern Rockies Action Group, #9 Placer Street, Helena
Student Environmental Research Center, University of Montana, Room 212, Venture Center, Missoula
Don Willems, Water Quality Bureau, Environmental Sciences Division
The Honorable Joseph Leone, Mayor of Billings, City Hall, Billings
Yellowstone County Air Pollution Control Agency, Billings
Water Quality Bureau, Environmental Sciences Division, Billings
Air Quality Bureau, Environmental Sciences Division, Billings
J. Anne Skinner, Public Information Officer, Dept. of Health & Env. Sciences
Northern Plains Resource Council, Stapleton Building, Billings

Ladies and Gentlemen:

Enclosed is a preliminary environmental review that has been prepared for conversion of three boilers at the Great Western Sugar Company plant at Billings, Montana from natural gas firing to coal firing.

Plans and specifications have been submitted to the Department of Health and Environmental Sciences, Air Quality Bureau, for approval of the construction permit.

This determination describes the conversion and operating conditions for the proposed plant configuration which will receive approval without the development of an environmental impact statement should no significant adverse comments be received. This determination is intended to insure all interested governmental agencies and public groups that this approval is being sought within the intent of both the Montana Environmental Policy Act and the Clean Air Act of Montana.

This document will be circulated for fifteen (15) days at which time the department will take appropriate action based on the comments received.

Sincerely yours,

Michael D. Roach, Chief
Air Quality Bureau

MDR:FOG:dmg
Enclosure

cc: Dr. A. C. Knight
Mr. Ben Wake
Mr. Tom Ellerhoff

MONTANA DEPARTMENT OF HEALTH AND
ENVIRONMENTAL SCIENCES

June 3, 1976

A PRELIMINARY ENVIRONMENTAL REVIEW
for
Boiler Conversions at Great Western Sugar Company
Billings, Montana

Pursuant to the Montana Environmental Policy Act, Section 69-6504(b)(3); the Clean Air Act of Montana, Title 69, Chapter 39, R.C.M. 1947; and rules adopted under the Clean Air Act of Montana, this preliminary environmental review was prepared by the Department of Health and Environmental Sciences, Environmental Sciences Division, concerning the proposed conversion of three of the five boilers at the Great Western Sugar Company plant at Billings, Montana from natural gas to coal fired.

This plant is located just outside the southern city limit of Billings, Montana.

SUMMARY OF POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments On Attached Page
1. terrestrial and aquatic life and habitats			X			X
2. water quality, quantity and distribution			X			X
3. soil quality, stability and moisture and geology				X		
4. vegetation cover, quantity and quality					X	X
5. aesthetics			X			X
6. air quality		X				X
7. unique, endangered, fragile, or limited environmental resources				X		
8. demands on environmental resources of land, water, air and energy			X			X
9. historical and archaeological sites				X		
10. solid waste				X		

POTENTIAL IMPACTS ON HUMAN POPULATION

	Major	Moderate	Minor	None	Unknown	Comments On Attached Page
1. social structures and mores				X		
2. cultural uniqueness and diversity				X		
3. local and state tax base and tax revenue			X			X
4. agricultural or industrial production			X			X

POTENTIAL IMPACTS ON HUMAN POPULATION (Continued)

	Major	Moderate	Minor	None	Unknown	Comments On Attached Page
5. human health				X		X
6. quantity and distribution of community and personal income				X		
7. access to and quality of recreational and wilderness activities				X		
8. quantity and distribution of employment			X			X
9. distribution and density of population and housing				X		
10. demands for government services				X		
11. industrial and commercial activity			X			X
12. demands for energy			X			X
13. locally adopted environmental plans and goals				X		
14. transportation networks and traffic flows			X			X

Terrestrial and Aquatic Life and Habitats:

Judging from comments made by a State Department of Fish and Game official, the impact of the conversion on wildlife both terrestrial and aquatic, will be minor.

The plant is located in an urban area and there will be a great amount of dilution of emissions before reaching areas populated by wildlife. Aquatic life will not be significantly effected since there will be essentially no change in the plant water discharge. All scrubber water will be clarified, and reused as process water prior to discharge. Beginning in 1977, all discharged water will be treated at the Billings municipal water treatment plant.

Water Quality, Quantity and Distributions:

The only new use for water will be in the flue gas scrubbing system. Water will be used to scrub the flue gas and wash boiler fly ash into the clarification pond. After the solids settle out, it will be mixed with fresh plant intake water for processing use. Negligible effects to the effluent water are predicted or are allowable per the water discharge permit issued to this plant.

Vegetation Cover, Quantity and Quality:

Due to the light increase in concentrations of pollutants in the vicinity of the plant, some effects on vegetation may occur. However, this plant only operates during non-growing seasons (October to March) so direct effects to growing vegetation will be minimized.

Aesthetics:

The new plant configuration will include one new 120 ft. tall stack emitting some particulate matter and water vapor, and the associated scrubbing system and ductwork. The overall change in plant appearance will be slight.

Air Quality:

Three of the five boilers at this plant will be converted from natural gas to coal firing. Boilers No. 1-4 are each rated at 100,000 pounds per hour (lb/hr) of steam and are presently fired with natural gas. Boiler No. 1 is base-loaded (a constant load) at 50,000 lbs/hr. Boilers 2-4 are allowed to absorb fluctuations in steam load. Boiler No. 2, 3 and 4 will be converted to coal firing. Boiler No. 1 will reamin on natural gas with No. 6 fuel oil as the back-up fuel. Boiler No. 5, which is a much smaller unit than the others, will remain on natural gas with No. 2 fuel oil as the back-up fuel. Boilers 1 and 5 have separate stacks with no flue gas cleaning systems. These will remain as they are now.

Steam from boiler No. 5 is used almost entirely for space heating. This is the "intercampaign" boiler. The campaign is that portion of the year when the plant is operated to process the sugar beet crop. Normally this is from October to March. Steam from boilers 1-4 is used primarily for process steam with about 50% being used for the multiple effect evaporators and the pan crystallizers (154,600 lbs/hr). Other process uses include steam jackets, the turbine generator, sugar storage silo conditioning, pump drives, steam tracing, sugar drying, equipment cleaning and syrup hearing.

The boilers generate 160 pounds per square inch gage (psig) steam but many of the processes use 40 psig steam. The turbogenerator is convenient in this respect since the exhaust steam from this unit is used again as process steam. Some pressure reducers are also used to get the steam pressure from 160 to 40 psig.

Discharge of the boiler flue gases from the present and future plant configurations is shown in Table I

During plant start-up, boilers 1-4 will be started sequentially. After boilers 1 and 2 have been brought on line there will be enough available steam to start the steam driven flue gas cleaning system. Other systems in the plant must be started before the flue gas cleaning system. Prior to operation of the scrubber, flue gases from boilers 1 and 2 will be discharged through stacks 2 and 4 without cleaning (Table I). Emissions from these stacks are not expected to exceed applicable standards during start-up.

Present and future pollutant emission rates are summarized in Table II. Table III gives some perspective to the increased emission rates.

Mathematical modeling of the future sulfur oxides (SO_x) and particulate emission rates show that the only possible violation of federal or state ambient air quality standard might occur during a malfunction where the scrubber had to be shut down (Tables IV through VII). In this case, the flue gases would have to be diverted to the existing brick and concrete stacks until corrective action could be completed or the plant shut down. The state 24-hour particulate matter standard of 200 micrograms per cubic meter (mg/m^3) of air could possibly be exceeded by 55 mg/m^3 (Tables IV & VII) but existing malfunction rules require action by the department and company for malfunctions lasting over 4 hours. These actions can and probably would preclude violations of this standard.

Modeling for nitric oxides (NO_x) was not done because insufficient data is available. These pollutants react in the atmosphere which creates an additional inaccuracy and the amount of control provided by the flue gas scrubbers is unknown. Data indicates that the annual federal ambient air quality standard for NO_x is not likely to be exceeded.

TABLE I

Great Western Sugar Company
Stack Configurations

Present

Boiler Number	Stack Number	Stack Height (ft)	Flue Gas Cleaning
1	1	76	None
2 3	2	225	None
4	4	200	None
5	5	70	None

Future

Boiler Number	Stack Number	Stack Height (ft).	Flue Gas Cleaning
1	1	76	None
2 3 4	6	120	Venturi Scrubber
5	5	70	None

TABLE II

Great Western Sugar Company Pollutant Emission Estimates Before and After Boiler Conversion

Present Emission Rates, lb/hr

	Part-iculates	SO_x	NO_x	Hydro-carbons	Carbon Monoxide
Boiler No. 1	0.6	Neg.	13.3	0.2	1.0
Boiler No. 2 & 3	2.2	0.1	124.7	0.7	3.6
Boiler No. 4	1.1	0.1	62.4	0.3	1.8
Boiler No. 5	Neg.	Neg.	0.6	Neg.	0.1
Pulp Dryers	21.2	Neg.	Neg.	Neg.	Neg.
Lime Kilns	Neg.	Neg.	Neg.	Neg.	Neg.
TOTAL	25.1	0.2	202.0	1.2	6.5

Future Emission Rates, lb/hr

	Part-iculates	SO_x	NO_x	Hydro-carbons	Carbon Monoxide
Boiler No. 1	0.6	Neg.	13.3	0.2	1.0
Boiler No. 2 & 3	100.0	109.7	342.3	18.0	35.0
Boiler No. 4					
Boiler No. 5	Neg.	Neg.	0.6	Neg.	0.1
Pulp Dryers	21.2	Neg.	Neg.	Neg.	Neg
Lime Kilns	Neg.	Neg.	Neg.	Neg.	Neg.
TOTAL	121.8	109.7	356.2	18.2	36.1

TABLE III
Principle Yellowstone County Pollutant Sources

Source	Emissions (lb/hr) Particulate	SO_x	NO_x	Operating Period (hrs/yr)
Cenex	95.	962.	129.	8400.
Conoco	53.	525.	248.	8400.
Exxon	222.	2,183.	334.	8400.
Montana Power	200.*	1,313.	1,055.	7920.
Montana Sulphur	0.	368.	1.	8760.
Area Sources	11,476.	353.	1,334	8760.
Present Great Western Sugar	25.	0.	202.	3360.
TOTAL	12,081.	5,704.	3,303.	
Future Great Western Sugar	100.	110.	356.	3360.

*Estimated

TABLE IV
Ambient Air Quality Standards
(Values in Micrograms Per Cubic Meter)

Pollutant	Time Period	Montana	Federal Primary	Federal Secondary
Sulfur Dioxide	1-hour	655	-	-
	3-hour	-	-	1300
	24-hour	262	365	-
	Annual	52	80	-
Particulate Matter	24-hour	200	260	150
	Annual	75	75	60

TABLE V

Measured Ambient Air Concentrations Under Present Condtions (Micrograms Per Cubic Meter)

Pollutant	1-Hour	24-Hour
Particulate Matter	-	157.0
Sulfur Dioxide	393.0	104.8

TABLE VI

Predicted Ambient Air Concentrations Under Proposed Emissions (Micrograms Per Cubic Meter)

Pollutant	1-Hour	24-Hour
Particulate Matter	-	164.3
Sulfur Dioxide	426.7	112.9

TABLE VII

Predicted Ambient Air Concentrations Under Upset Conditions (Micrograms Per Cubic Meter)

Pollutant	1-Hour	24-Hour
Particulate Matter	-	255.2
Sulfur Dioxide	432.4	114.3

Demands on Environmental Resources of Land, Water, Air and Energy:

About 466,000 cubic feet per hour (ft^3/hr) of natural gas are now consumed during plant operation. The proposed boiler systems and unmodified systems would consume 63,056 ft^3/hr of natural gas and 43,500 lbs/hr of coal. Therefore, about 403,000 ft^3/hr of natural gas would be available to other consumers during the campaign, which coincides with the coldest part of the year.

Water usage will not be increased. The venturi scrubbers use 1430 gallons per minute (gpm) of water on a once-through basis. Part of this water is then used to move fly ash from the boilers to the ash pond. The other portion goes directly to this pond. After settling, this water is pumped to the plant water intake where it is blended with fresh water for use in the process.

Local and State Tax Base and Tax Revenue:

Great Western Sugar Company reports that this plant improvement will cost a total of $3.21 million. The air pollution control system portion is reported to be $1.26 million. Additional property taxes that must be paid on these improvements will be about $56,000 per year assuming that the flue gas cleaning system is taxed as air pollution control equipment and that no tax reduction is included due to removal of existing equipment.

Agricultural or Industrial Production:

The modifications to this plant are not intended to increase the sugar production rate. They are made to insure an adequate and reliable fuel for the boilers at a reasonable cost. Therefore, there will not be any inducement for the farmers to increase production of sugar beets.

Human Health:

It appears unlikely that ambient air quality standards will be violated. Since the standards were set to protect human health, no effect is anticipated.

Quantity and Distribution of Employment:

It is reasonable to assume that the railroad will not require additional employment in order to handle about 10 more carloads of coal per day. Great Western Sugar Company will require additional employees to unload and move coal and coal cars, operate and service coal handling equipment and repair, service and operate the flue gas cleaning system. About six more employees will be required by the company during the campaign.

Industrial and Commercial Activity:

The only effect known at this time will be a very slight increase in the amount of materials and equipment required to keep a more complex system operating.

Coal transportation and handling will require additional manpower.

Demands for Energy:

The three boilers firing coal will consume about 17-20% more energy for the same net steam production compared to gas firing. The new heat input to the three boilers will be about 58.5 x 10^6 British thermal units per hour (Btu/hr). Some of the additional energy is consumed by the gas scrubber water pumps, flue gas fan drive, coal crusher drive motor, feed belt drive motors, new boiler fan motors, boiler feed screw motors, ash flume water pump and other miscellaneous electrical devices. This

equipment will require about 1130 horsepower or an equivalent of 2.88×10^6 Btu/hr. About 85% of the 1130 horsepower is used in the flue gas scrubbing system and the remainder is used by the boilers.

Transportation and Traffic Flows:

The city-county planning agency in Billings reported that there is presently little congestion in the plant area. Widening of State Street may be necessary by the year 1990. The method to reduce traffic delays currently being applied is the scheduling of trains to avoid peak motor vehicle traffic hours.

During recent campaigns there were 100 railroad cars/day of beets, six cars/day of limestone and about a half car/day of coke delivered to the plant. Naturally, between campaigns there is very little railroad traffic into and from the plant. Year-round there are about three cars/day of sugar shipped from the plant.

Year-round, about 3-4 large truckloads per day of beet pump pellets leave the plant. About four truckloads per day of molasses arrive at the plant during the campaign period.

Bibliography:

This preliminary environmental review was prepared by Fred O. Gray of the Air Quality Bureau, with primary assistance from the following persons:

Tom Ellerhoff, Department of Health and Environmental Sciences (DHES)
James Gelhaus, DHES
Robert E. Vandel, Great Western Sugar Company
W. D. Watson, Great Western Sugar Company
Robert Cevero, City-County Planner for Transportation, Billings
James A. Posewitz, Department of Fish and Game

The contributions by other company, state, county and city officials were also appreciated.

Conclusion:

The Air Quality Bureau of the Department of Health and Environmental Sciences does not believe that any of the adverse problems associated with this conversion are significant. Further, they are not believed to be more important than saving the amount of natural gas now being consumed in the three boilers.

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Department of Health and Environmental Sciences
STATE OF MONTANA HELENA, MONTANA 59601

John S. Anderson M.D.
DIRECTOR

May 7, 1976

MAY 10 1976
STATE DOCUMENTS

Re: Arrowleaf West
Teton County

Robert W. Jensen, Box 632, Choteau, 59422
Mary Sexton, 815 5th Avenue South, Great Falls
Honorable Thomas Judge, Governor, State of Montana, Helena
Citizens Advocate, Helena
Environmental Quality Council, Helena
Montana Fish and Game Department, Helena
Department of Highways, Helena
Department of Intergovernmental Relations, Division of Planning, Helena
Department of Natural Resources and Conservation, Helena
Department of State Lands, Helena
Montana State Library, Helena
Board of County Commissioners, Courthouse, Choteau
City-County Planning Board, Courthouse, Choteau
Mike Clasby, Sanitarian, Courthouse, Conrad, 59425
Environmental Information Center, Box 12, Helena
C. W. Gonder, 823 East Call Street, Livingston
Mrs. Vel Jansen, 430 South Sixth, Livingston
Mrs. Winifred Lucky, 420 South Sixth, Livingston
Mary Lee Reese, League of Women Voters, 29 South Alta, Helena
Tom Horobik, Pres., Montana Wilderness Assn., 4000 4th Ave. N., Great Falls
Northern Rockies Action Group, #9 Placer Street, Helena
Paul T. Richards, 902 North Park, Helena
John Schillinger, Microbiology Department, Montana State University, Bozeman
Concerned Citizens for a Quality Environment, c/o Ron Erickson, Chairman, University of Montana, Missoula
Student Environmental Research Center, University of Montana, Room 212, Venture Center, Missoula
John P. Duke, Assistant Vice President, Land Management, Burlington Northern, 650 Central Building, Seattle, Washington, 98104
Herb Anderson, P. O. Box 42, Raynesford, MT 59469
Mike Roach, Air Quality Bureau, Environmental Sciences Division
Don Willems, Water Quality Bureau, Environmental Sciences Division
State-Local Relations Project, Commission on Local Government, State Capitol, Helena
Hugh Schaefer, 206 Ben Hogan Drive, Missoula
Charles Jonkel, School of Forestry, University of MT, Missoula

Enclosed is a preliminary environmental review that has been prepared for Arrowleaf West, a proposed subdivision in Teton County.

Subdivision plans and specifications have been submitted to the Department of Health and Environmental Sciences for approval of water supply, sewage disposal and solid waste disposal.

This determination defines the project and specifies those conditions under which the proposed subdivision will receive approval without the development of an environmental impact statement. This determination is intended to insure all interested governmental agencies and public groups that this approval is being sought within the intent of both the Montana Environmental Policy Act and the Montana Subdivision laws.

This document will be circulated for fifteen (15) days at which time the department will take appropriate action based on the comments received.

Sincerely yours,

Edward W. Casne

Edward W. Casne, Chief
Subdivision Bureau
Environmental Sciences Division
Phone: 449-3946

EWC:APK:ti
Enclosure
cc: Ben Wake
Terry Carmody
Tom Ellerhoff

MONTANA DEPARTMENT OF HEALTH
AND
ENVIRONMENTAL SCIENCES

May 7, 1976

A PRELIMINARY ENVIRONMENTAL REVIEW
for
Arrowleaf West
A proposed Subdivision in Teton County, Montana

Pursuant to the Montana Environmental Policy Act, Section 69-6504(b)(3); the act controlling both public and private water supply and sewage disposal for subdivisions, Section 69-5001 through 69-5009; and the act to control water pollution, Section 69-4801 through 69-4827, R.C.M. 1947, the preliminary environmental review was prepared by the Department of Health and Environmental Sciences, Environmental Sciences Division, concerning the proposed Arrowleaf West Subdivision, for which a submittal has been received requesting subdivision plat approval.

The proposed subdivision is the second phase of a two phase development. The second phase divides 149.25 acres into 37 lots, with the size of the lots ranging from 2.1 acres to 8.6 acres. The development is situated in Teton County, Sections 33 and 34, Township 25 North, Range 8 West, 24 miles Northwest of Choteau.

IMPACT ON PHYSICAL ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Page
1. terrestrial and aquatic life and habitats	X - to -	X				X
2. water quality, quantity and distribution		X				
3. soil quality, stability and moisture and geology		X				
4. vegetation cover, quantity and quality		X				X
5. aesthetics		X				X
6. air quality			X			
7. unique, endangered, fragile, or limited environmental resources					X	X
8. demands on environmental resources of land, water air and energy			X			
9. historical and archaeological sites			X			X
10. solid waste			X			X

POTENTIAL IMPACTS ON HUMAN POPULATION

	Major	Moderate	Minor	None	Unknown	Comments on Attached Page
1. social structures and mores					X	
2. cultural uniqueness and diversity		X				X
3. local and state tax base and tax revenue			X			X
4. agricultural or industrial production			X			X
5. human health			X			
6. quantity and distribution of community and personal income					X	
7. access to and quality of recreational and wilderness activites		X				X
8. quantity and distribution of employment			X			X
9. distribution and density of population and housing					X	
10. demands for government services			X			X
11. industrial and commercial activity		X				X
12. demands for energy			X			
13. locally adopted environmental plans and goals			X			X
14. transportation networks and traffic flows			X			X

Terrestrial and Aquatic Life and Habitats:

Judging from comments made by a State Department of Fish and Game official, the impact of the development on wildlife ranges from moderate to major.

Harley Yeager, Region 4 information officer for the Fish and Game Department, Great Falls, said the subdivision is in mule deer winter range and adjacent to an important Rocky Mountain bighorn sheep wintering area.

". . . Late fall, winter and spring use of the development and surrounding area may have a detrimental effect on the migratory habits of these animals," he wrote. Additionally, Yeager said the development lies within an area occasionally used by black bears and "less frequently" used by grizzly bears. The federal government has classified grizzly bears as being a threatened species in the lower 48 states.

". . . Grizzly use probably occurs during the spring after hibernation ceases," he wrote. "Prospective cabin builders should be made aware of the bears' 'trespassing' habits and the possibility of man-bear confrontations."

The state official suggested that if the development is approved, a department fisheries biologist stationed in Choteau be one of the persons consulted to help design the river crossing to the lots on the west side of the South Fork of the Teton River.

Yeager said an inspection of the site revealed that utility poles are in or near the river channel. ". . . This should be moved out of the floodplain to eliminate loss of the line due to flooding and to keep machinery out of the river channel," he said.

Neither the river nor Arrowleaf Lake, a small seasonal body of water, are significant fisheries. In the past three years both the lake and the river have been dry. The water level in both fluctuates with the seasons.

Water Quality, Quantity and Distributions

Five wells have been developed on the 320 acres. This was deemed adequate evidence that a water supply is available.

Soil Quality, Stability and Moisture and Geology

Soil profile test holes and percolation tests indicate the soils are suitable for on-site sewage disposal. Care must be exercised in locating drainfields on Lots 20 through 24 and Lots 26 through 30 in order to avoid the steeper slopes.

Vegetation Cover, Quantity and Qaulity:

Yeager differed with the developer concerning the status of the flora. The developer contended there was no "critical" plant communities in the proposed development, Yeager thought there was.

". . . The present native plant community of the proposed subdivision is a limber pine type with junipers, silverberry and buffaloberry and other shrubs," Yeager said. "Preservation of this plant community is needed to maintain ecological stability of the Arrowleaf area. Mule deer utilize the limber pine types for food and shelter when deep snows drive them down from nearby higher elevations. Therefore, development of the Arrowleaf West subdivision will eliminate a portion of the mule deer winter range."

The developer claimed the impact of the development will be minimized by the use of existing roads and adopting restrictive covenants which will discourage the destruction of the flora.

Aesthetics:

The development will irrevocably change the character of the land from a pastoral to a suburban setting. This will be a permanent change and although it cannot be totally mitigated, the impact of the development can be lessened if the developer strictly enforces the proposed restrictive covenants.

The fact that power and telephone lines will be above ground, instead of below, will add to the problem of blending the development into the landscape.

Even though the character of the land will be changed, the over all impact will not be as great as it would if the development was the only subdivision in the area. However, the fact that it is the second phase of a two phase development, and the other phase is adjacent to the proposed project, decreases the impact of the aesthetic transition from a natural to a developed state.

Air Quality:

Air quality might be locally altered due to blowing dust for brief periods during home and road construction. Road dust can be temporarily controlled by wetting down the road bed.

Unique, Endangered, Fragile or Limited Environmental Resources:

The developer contends that since the development is designed mainly for "weekend recreational use" the impact on wildlife will be minimal. According to the developers, the steps which will be taken to control development will produce a setting which will not seriously disturb the use of winter range.

The Department of Fish and Game disagrees. It's impossible to speculate as to whether the subdivision will be fully developed and to what degree. However, if the subdivision is completely developed and occupancy is held to recreational use, the influence of man will still be strong enough to force wildlife to seek quieter, more undisturbed surroundings. But this process has probably started since the first phase of the development has been approved for several years.

Solid Waste:

Each property owner will be responsible for disposing of solid waste. According to the covenants for the subdivision, trash, garbage or other solid waste must be taken to another site or preferably the county sanitary landfill. A county official said the county landfill can accomodate waste from the development.

Cultural Uniqueness and Diversity:

Teton County is predominantly a rural area, with agriculture being the major business. It's difficult to say what type of person will buy lots in the subdivision, but quite likely they will be from outside the county.

It seems logical to presume that Arrowleaf West would appeal to persons living in Montana's metropolitan areas, such as Great Falls, Helena, Butte, etc. The close proximity of the development to Great Falls, the second largest city in the state, and Helena, the fifth largest, would make it convenient for persons living in either city to spend weekends at the proposed development.

If urban dwellers become the predominant owners in the development, they would bring an urban influence to the rural culture. Most likely no serious cultural conflicts would result, but there might be an air of suspicion and social separation between the groups.

Such things as access to private land for hunting, fishing and general recreational pursuits might become points of friction, however, there is enough federal land near the development to minimize such occurances.

Last summer a hearing was held to gather public comment concerning the project. An interesting aspect of the hearing was that many of the persons who were against the development were persons who owned small parcels of land in the area. Their main concern was that the character of the land would be drastically changed by intensive development. Thus, many of the reasons which prompted them to invest in small rural acreages will be lost with the advent of more property owners.

These persons also joined permanent residents in voicing concern about the possible increase in vandalism which they contended will occur if more persons moved into the area.

Local and State Tax Base and Tax Revenue:

The county should benefit from the change in the taxable value of the land. Taxes on a plot of subdivided land are substantially higher than taxes on agricultural land.

Theoretically, the increase in taxes balances the increase in government services, such as road maintance, schools, law enforcement, etc. However, persons attending the public review of the proposed development wondered if taxes would pay for damage to the county road which runs through the subdivision.

If the development doesn't result in an increase in school, fire fighting and law enforcement staffs the county will be able to use the taxes generated from the subdivision for other projects. But, at full development it's likely some government services will be effected.

Agricultural or Industrial Production:

The developer described the land as being "very poor grazing land." Assuming the analysis was correct, the subdivision will not be taking prime agricultural land out of production.

Access To and Quality of Recreational and Wilderness Activities

The area offers a variety of recreational opportunities. In addition to easy access to federal forest lands, outdoor enthusiasts will be close to the Bob Marshall Wilderness area, two dude ranches and for those interested in winter sports, the Teton Pass winter sports area is nearby.

The proposed development will increase the recreational use of the area, but due to the vast amount of public land, the impact will likely be moderate.

Quantity and Distribution of Employment:

Since the development is aimed at recreational or second home use, it seems likely that most of the owners will be from outside the county, thus local employment shouldn't be effected.

Demands for Government Services:

Again, the nature of the subdivision should keep the impact on government services to a minimum. If the development principally attracts people seeking weekend retreats, there should be no impact on the local school system.

The consequences of the subdivision on local law enforcement and fire fighting agencies will be minimal, according to John Howard, sheriff and rural fire chief of Teton County. He said even if full development occurred, it wouldn't warrant adding to the fire fighting or law enforcement staffs.

Industrial and Commercial Activity:

The subdivision should increase the needs for goods and services, thus benefiting the local economy--particularly in Choteau. During the building phase, local contractors and building supply firms will probably realize a temporary increase in business.

Locally Adopted Environmental Plans and Goals:

The county has a city-county planning board but does not have a master plan for Teton County. The county does not have a professional planning staff, but does receive professional advice from the State Department of Community Affairs' Planning Division.

Transportation Networks and Traffic Flows:

The Teton City-County Planning Board had a number of suggestions for improving the road network in Arrowleaf West. The board said some of the entrance roads meet the county road at too sharp an angle to conform with county subdivision regulations. The regulations call for roads to intersect at right angles or not less than 60 degrees.

In a letter to the board last summer, State Planner A. J. Richardson agreed with the county's recommendation, noting that the changes would provide intersections with better turning angles and increase visibility. The board also suggested that cul-de-sacs should be placed at the end of each dead-end road.

Another concern related to the road system within the proposed subdivisions was a bridge across the river to provide access to lots 13 and 14. The developer has agreed to build the crossing in accordance with advice from members of the State Department of Fish and Game and Soil Conservation Service.

Conclusion:

This preliminary environmental review was prepared by Tom Ellerhoff, with information supplied by Alfred Keppner, State Subdivision Bureau, Alfred L. Heckerman, Soil Conservation Service, Dr. D.C. Taylor, Univeristy of Montana, Willis J. Johns, Montana Bureau of Mines & Geology, various county and state officials, and the developer.

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Department of Health and Environmental Sciences
STATE OF MONTANA HELENA, MONTANA 59601

John S. Anderson M.D.
DIRECTOR
A. C. Knight, M. D., F. C. C. P.
ACTING DIRECTOR

April 12, 1976

√ State Library, Helena
Board of County Commissioners, Flathead County Courthouse, Kalispell
City-County Planning Board, Room 3, the Ford Building, Kalispell
B. C. McIntyre, M.D., Co. Health Officer, Box 427, Whitefish
County Sanitarians' Office, Box 919, Kalispell
Branch Office, Box 1031, Kalispell
Environmental Quality Council, Helena
Department of Fish and Game, Helena
Martha T. Nielson, 1903 Helena Flats Road, Kalispell
Mr. Roy Nugent, 1845 Helena Flats Road, Kalispell
Mr. Harry Johnson, 1488 Helena Flats Road, Kalispell

PRELIMINARY ENVIRONMENTAL REVIEW FOR THE HARRY JOHNSON FEEDLOT

Pursuant to the Montana Administrative Code, Section 16-2.2(2)-P2030 (Rule IV), the following preliminary environmental review has been prepared by the Department of Health and Environmental Sciences concerning the Johnson Ranch and a request by Mr. Harry Johnson for a waste discharge permit for the animal confinement facility located north of Kalispell, Montana.

The purpose of this preliminary environmental review is to inform all interested governmental agencies, public groups, or individuals of the proposed action and to determine whether or not the action may have a significant effect on the human environment. This preliminary environmental review will be circulated for a period of ten days at which time a decision will be made as to our future action. If you care to comment on this proposed action, please do so within that allotted time.

The animal confinement facility around which this action is centered is located in Sec. 15, T. 29 N., R. 21 W., of Flathead County. The feeding is conducted at two locations within that section, one being in the SE¼ of the NE¼ and the other being located in the SW¼ of that same section. The site is located approximately seven miles northeast of Kalispell and is indicated on figure no. 1.

This site has been utilized since 1965 as an animal confinement facility. At times as many as 9,000 head of cattle were held in confinement at the previously mentioned location. In recent years, the number of animals held in confinement has been significantly less with use being

limited to approximately 1,500 head. Mr. Harry Johnson, however, proposes to increase the number of animals held in confinement over existing levels to a maximum of 2,000 head. Figures 2 and 3 indicate which pens within the animal confinement facility are proposed to be used in the future. The facility, if used as proposed, would encompass approximately 60 acres. This area is quite flat with slopes of approximately 0 to 1%. Soil characteristics are a fine, sandy loam on the surface with a gravelly subsurface. Groundwater depth varies between four and ten feet. Surface runoff which would be generated from precipitation falling directly on the feeding area would be contained by existing dikes. In the case of feedlot no. 1, pens 2 through 8 and 9 through 16 would be the only ones used for feeding purposes. Surface runoff from these pens would be contained behind a dike which parallels Spring Creek on the northwest corner of the feeding operation. This dike is approximately 100 feet from the creek itself. In the case of feedlot no. 2, surface runoff from the feeding area is prevented from reaching Spring Creek due to the adjacent roadway. Only pens 31 through 34 will be used for feeding purposes.

Surface runoff and livestock waste which accumulates in the control facilities will be removed as necessary to maintain maximum storage capacity. The waste material from the control facilities, as well as from the feeding area itself, will be disposed of on surrounding agricultural land. Approximately 1,300 acres of such land is available for waste disposal. This material would then be utilized for its nutrient value by the crops that are grown with little, if any, detrimental effects to either the soil or the growing crops.

Any animal confinement facility such as this will have an effect on the surrounding environment, but adverse environmental effects can be minimized through adherence to a good waste management program. As previously stated, surface runoff which could be expected from the feeding area following a 10-year, 24-hour rainfall event should be prevented from reaching state waters. There is, however, some concern regarding possible impact of this facility on groundwater in the area. To monitor this situation, a minimum of four observation wells will be installed, two on either side of feedlot no. 1. The owner or operator of this facility will be required to monitor the quality of the groundwater in that area in accordance with a schedule arrived at by Water Quality Bureau personnel. If the results of this sampling indicate that quality of the groundwater is adversely being affected by the animal confinement facility, the feeding areas will be cleaned and lined as necessary with a high clay material which will prevent downward percolation of waste materials.

Flies around the animal confinement facility will be controlled through a baiting and/or spraying program. Dead animals will be disposed of at the Flathead County sanitary landfill.

Past operation of this facility at the maximum capacity of approximately 5,000 animals did result in significant adverse water quality.

Livestock waste was carried by surface runoff from several pens directly into Spring Creek causing a reduction in water quality. To eliminate or minimize to the greatest extent possible the adverse environmental impact from this facility, a number of pens will no longer be used for livestock feeding. By eliminating these pens, the surface runoff from the remaining pens will be contained and prevented from reaching state waters. Also, as previously indicated, groundwater quality will be monitored to determine any adverse impact.

The entire area surrounding the site of this animal confinement facility is utilized primarily for agricultural production. There are no known historical or archaeological sites which would in any way be affected by the operation and the proposed increase in numbers and should, therefore, place no unusual demands on other environmental resources. If the waste management program as outlined in this preliminary environmental review is adhered to, the problems associated with earlier operation of this facility should be eliminated or significantly minimized.

Secondary and social impact due to the proposed action should be minimal due to the fact that the area has been used for quite some time as an animal confinement facility, and a change in use of the land would not occur. The increased number of livestock on feed would result in an increase in local tax revenues and could contribute slightly to additional employment in the area and to an increased market for a wide variety of products. While the proposed action would not have a significant impact on the transportation network, it is possible that traffic flows in and around the animal confinement facility would increase as raw materials are periodically hauled into the site and livestock later hauled to market. As previously stated, the operation is currently located in an agricultural area and as such, is consistent with current land uses. While the increased number of livestock may result in a slight increase in energy demand, such an increase would be much less at this site than if an entirely new facility were initiated.

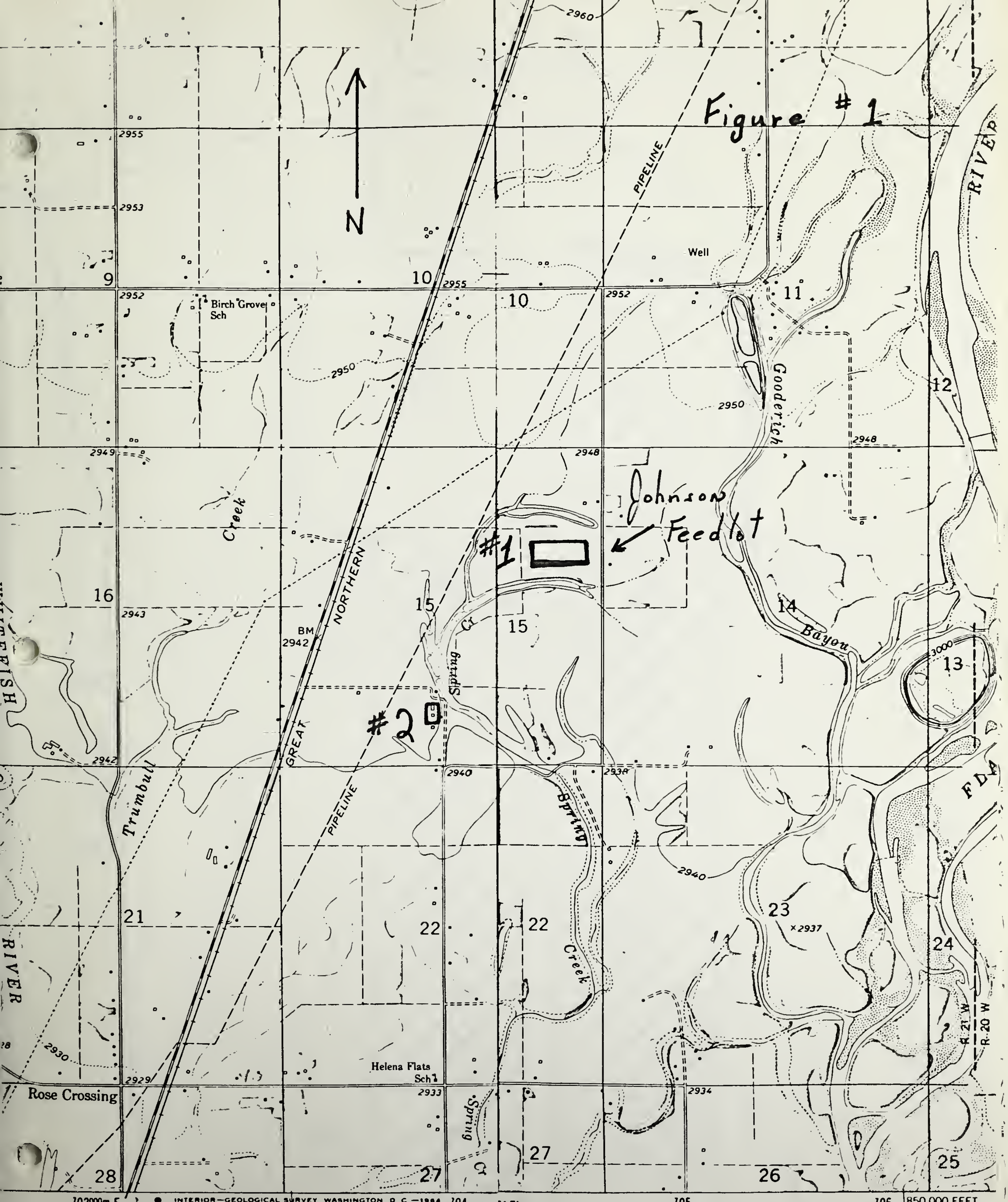
In summary, the overall impact of the proposed action is significantly minimized due to the fact that the site has been used for quite some time as an animal confinement facility and the increase in animal numbers which is proposed is far short of the numbers which have been held in confinement at this site in the past.

Steven L. Pilcher

Steven L. Pilcher
Water Quality Bureau
Environmental Sciences Division

SLP:vlf
Attachment
cc: Ben Wake
Air Quality Bureau

Figure #1



Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography by photogrammetric methods from aerial photographs taken 1956 Field checked 1962

ROAD CLASSIFICATION

Medium-duty

Light-duty

Unimproved dirt

figure 2

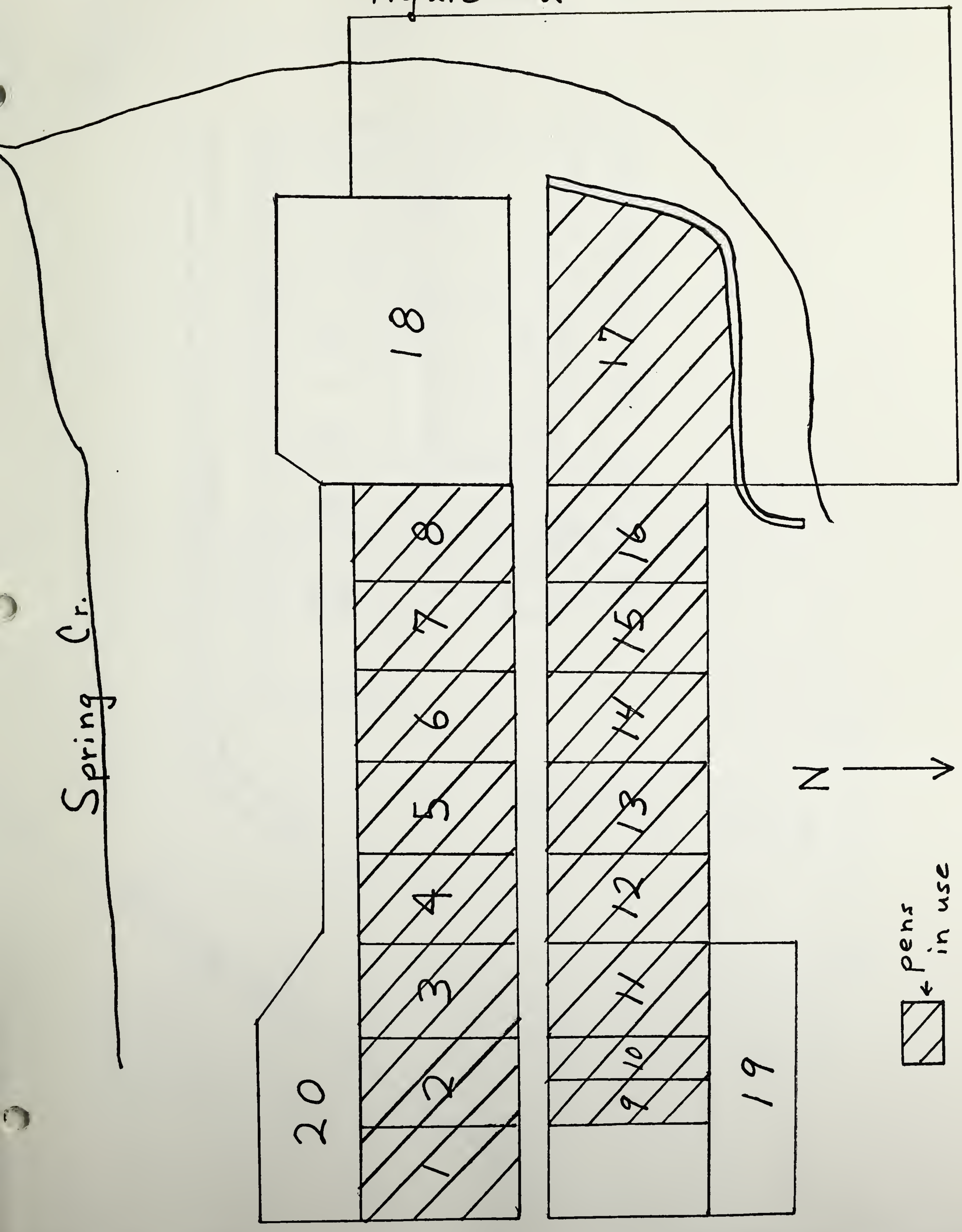
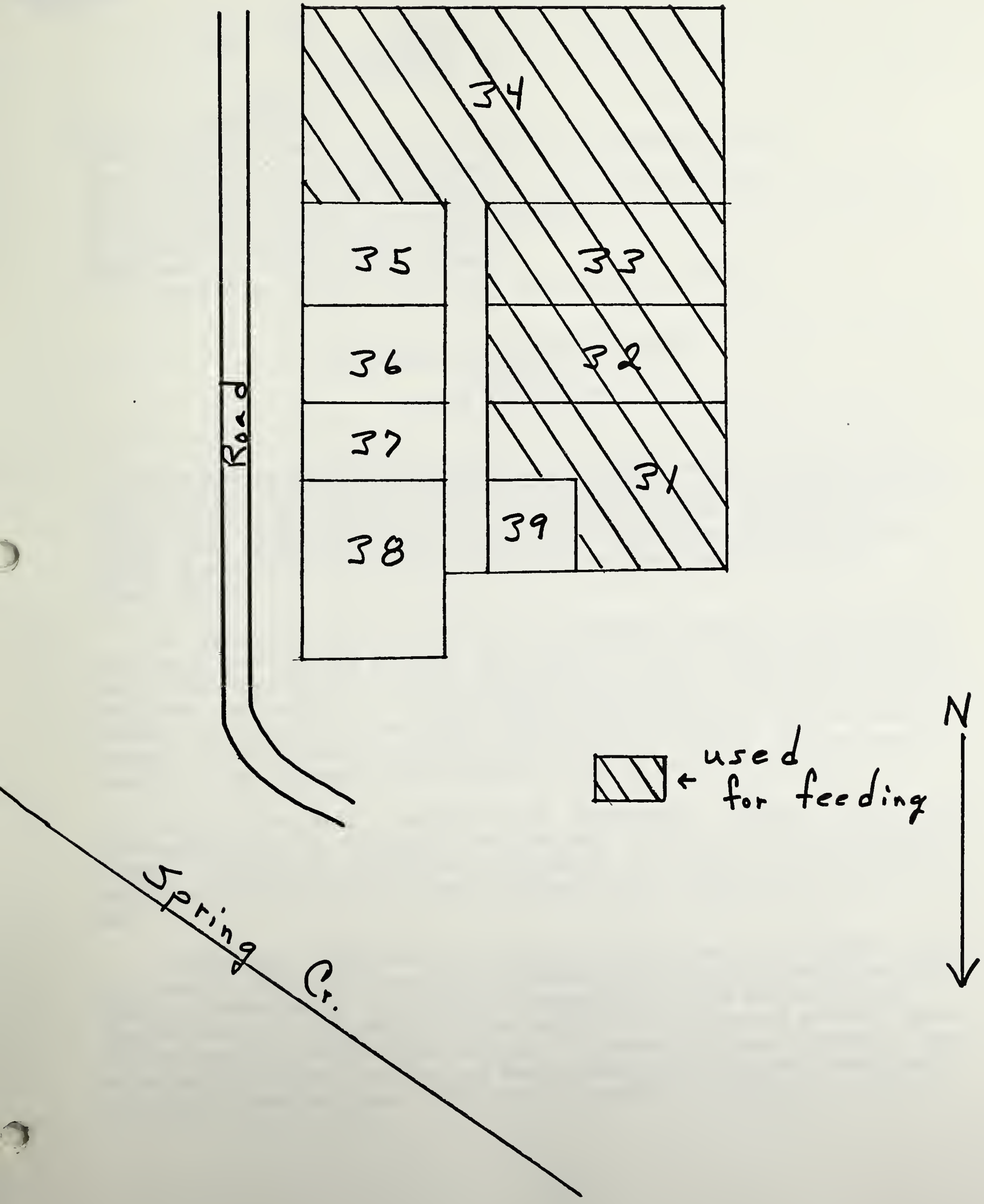


figure 3



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Department of Health and Environmental Sciences
STATE OF MONTANA HELENA, MONTANA 59601

John S. Anderson M.D.
DIRECTOR
A. C. Knight, M. D., F. C. C. P.
ACTING DIRECTOR

April 7, 1976

APR 9 1976
STATE DOCUMENTS

✓State Library, Helena
Board of County Commissioners, Lake County Courthouse, Polson
County Sanitarian, Box 1210, Polson
Ralph Campbell, M.D., Co. Health Off., Finley Point, Polson
Kalispell Branch Office, Box 1031, Kalispell
Environmental Quality Council, Helena
Department of Fish and Game, Helena
H. H. Normandeau, Route 1, Box 169B, Ronan, Montana 59864

PRELIMINARY ENVIRONMENTAL REVIEW FOR THE SPRING CREEK RANCH

Pursuant to the Montana Administrative Code, Section 16-2.2(2)-P2030 (Rule IV), the following preliminary environmental review has been prepared by the Department of Health and Environmental Sciences concerning the Spring Creek Ranch and a request by Mr. H. H. Normandeau for a waste discharge permit for that animal confinement facility located north of Ronan, Montana.

The purpose of this preliminary environmental review is to inform all interested governmental agencies and public groups of the proposed action and to determine whether or not the action may have a significant effect on the human environment. This preliminary environmental review will be circulated for a period of ten days at which time a decision will be made as to whether or not a waste discharge permit should be issued. If you care to comment on our proposed action, please do so within that allotted time.

Spring Creek Ranch, operated by Mr. Normandeau, includes a small animal confinement facility located in the SW¼,SW¼, T. 21 N., R. 20 W., of Lake County. The site of this animal confinement facility is approximately one and one-half miles north of Ronan, Montana and is indicated on the attached map.

This animal confinement facility has capacity for approximately 100 to 150 animals, but rarely contains in excess of 50 animals. Waste material which is generated by the livestock accumulates on the surface of the feeding area and is periodically carried off in the form of surface runoff following major precipitation events. To prevent this waste material from entering state waters, a dike has been constructed along the lower side creating a retention pond. This pond is capable of retaining the runoff

which can be expected from the drainage area following a 10-year, 24-hour rainfall event. The waste material which accumulates on the surface of the feeding area and in the retention pond is periodically removed and disposed of on adjacent agricultural land. The waste material will then be utilized for its nutrient value with little, if any, detrimental effects to soil or crops.

Flies around the animal confinement facility are controlled through a waste management program and a spraying program. Dead animals are disposed of through burial. Odors and dust from this animal confinement facility are minimized through the use of straw and wood shavings as bedding material and frequent removal of the waste material.

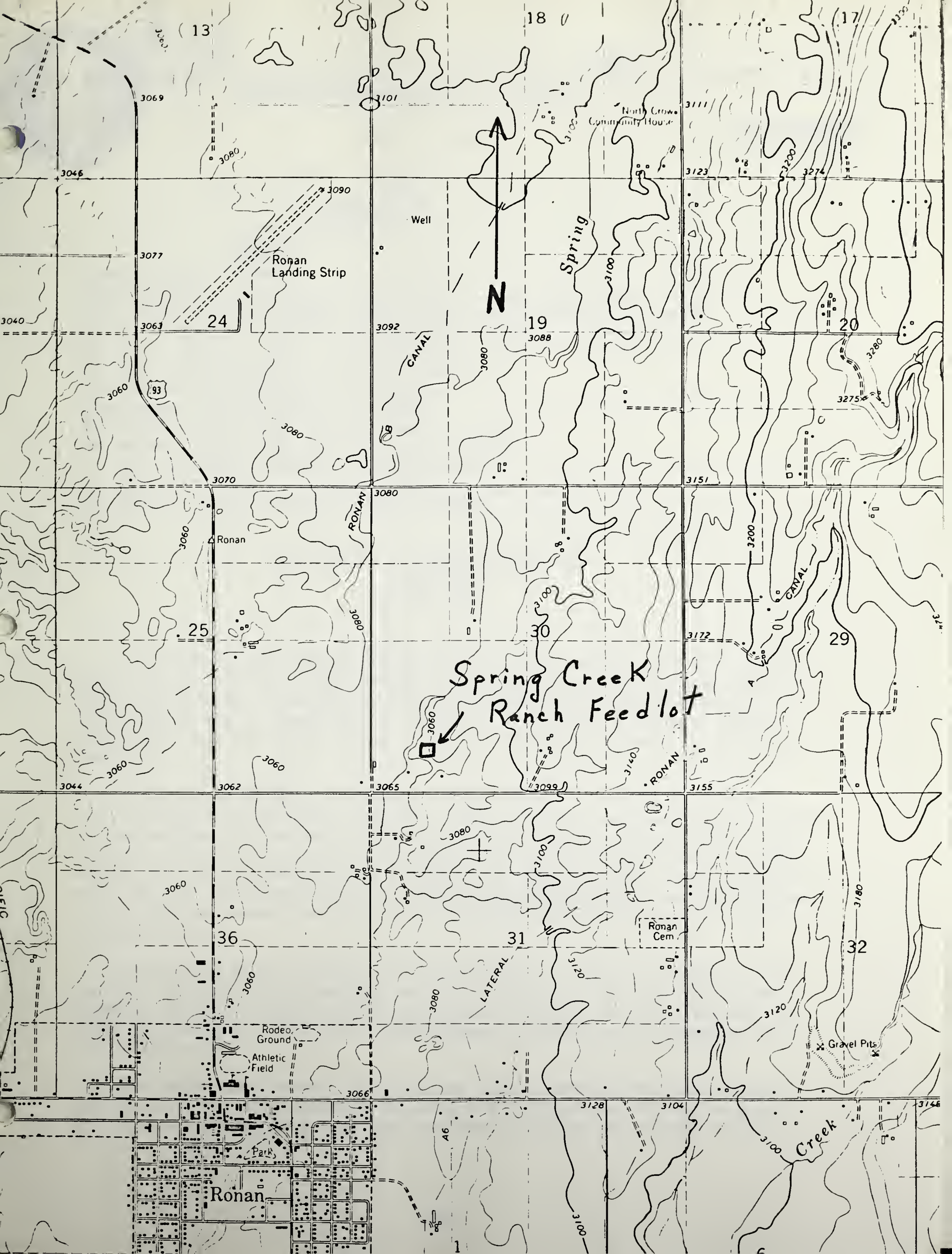
Any animal confinement facility will have an effect on the surrounding environment, but adverse environmental effects can be minimized through adherence to a good waste management program.

The only alternative available to Mr. Normandeau would be relocation of the existing animal confinement facility. The entire area surrounding the site is currently utilized primarily for agricultural production and such relocation does not appear economically justifiable. There are no known historical or archaeological sites which would in any way be affected by the existing facility and due to the fact that it is an existing facility, it should not place unusual demands on additional environmental resources. If the waste management program as outlined in the permit application is adhered to, the operation should result in minimal adverse environmental effects.

Steven L. Pilcher

Steven L. Pilcher
Water Quality Bureau
Environmental Sciences Division

SLP:vlf
Attachment
cc: Ben Wake
Air Quality Bureau



Spring Creek Ranch Feedlot

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Department of Health and Environmental Sciences
STATE OF MONTANA HELENA, MONTANA 59601

John S. Anderson M.D.
DIRECTOR
A. C. Knight, M. D., F. C. C. P.
ACTING DIRECTOR

April 7, 1976

APR 9 1976
STATE DOCUMENTS

✓State Library, Helena
Board of County Commissioners, Flathead County Courthouse, Kalispell
City-County Planning Board, Room 3, the Ford Building, Kalispell
County Sanitarian's Office, Box 919, Kalispell
Mr. B. C. McIntyre, M.D., Co. Health Off., Box 427, Whitefish
Kalispell Branch Office, Box 1031, Kalispell
Environmental Quality Council, Helena
Department of Fish and Game, Helena
Mr. Robert Sutton, 405 Tetrault Road, Kalispell
Mr. Walter Zidack, Whitefish Stage, Kalispell
Mr. Karl Schrade, Tetrault Road, Kalispell
Mr. Richard Motichka, Trumble Creek Road, Kalispell
Mr. Mike A. Bolog, Tetrault Road, Kalispell

PRELIMINARY ENVIRONMENTAL REVIEW
FOR THE
SUTTON RANCH

Pursuant to the Montana Administrative Code, Section 16-2.2(2)-P2030 (Rule IV), the following preliminary environmental review has been prepared by the Department of Health and Environmental Sciences concerning the Sutton Ranch and a request by Mr. Robert J. Sutton for a waste discharge permit for that animal confinement facility located northwest of Kalispell, Montana.

The purpose of this preliminary environmental review is to inform all interested governmental agencies, public groups, and interested citizens of the proposed action and to determine whether the action may have a significant effect on the human environment. This preliminary environmental review will be circulated for a period of ten days at which time a decision will be made as to whether or not a waste discharge permit should be issued. If you care to comment on this proposed action, please do so within that allotted time.

The Sutton Ranch includes the operation of a total confinement swine facility located in the NW¼NW¼, Sec. 34, T. 30 N., R. 21 W., of Flathead County. The site of this animal confinement facility is approximately two miles northwest of the Glacier International Airport and is indicated on the attached map.

The animal confinement facility was constructed in 1967 and currently has capacity for approximately ten sows with litters and 400 feeder pigs. Mr. Sutton proposes to expand this existing operation to provide capacity

for an additional 200 animals. These livestock are normally totally confined within the buildings. Waste material which is generated by the livestock in confinement drops through the slatted portion of the floor and into liquid manure pits beneath the buildings. The waste material which accumulates within these storage facilities is then periodically removed and disposed of in a liquid state on nearby agricultural land. Approximately 220 acres of adjacent agricultural land is available for waste disposal. The waste material will then be utilized for its nutrient value with little, if any, detrimental effects to soils or crops in that area.

Flies around the animal confinement facility are controlled through a combination spraying and baiting program. Dead animals are disposed of at the county sanitary landfill.

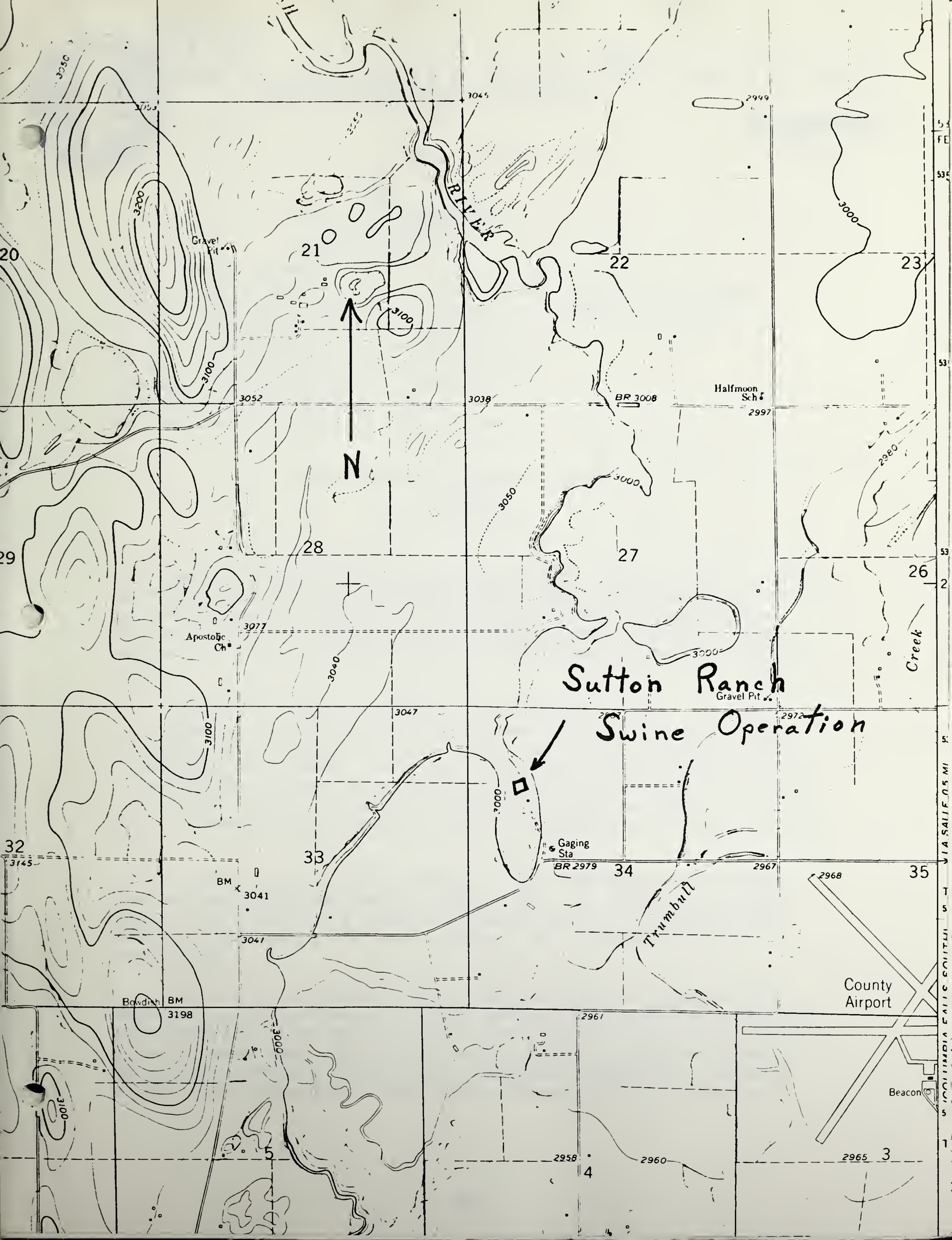
Any animal confinement facility will have an effect on the surrounding environment, but adverse environmental effects can be minimized through adherence to a good waste management program. Our office has never received complaints of odor problems associated with this animal confinement facility, and no increase in such problems would be anticipated with the proposed expansion.

The only alternatives available to Mr. Sutton would be to continue operating at existing capacity without expansion or total relocation of the existing animal confinement facility. The entire area surrounding the site of this facility is currently utilized primarily for agricultural production and the previously mentioned alternatives do not appear to be economically justifiable. There are no known historical or archaeological sites which would in any way be affected by the existing facility, and due to the fact that it is an existing facility, it should not place unusual demands on additional environmental resources. If the waste management program as outlined in the permit application is strictly adhered to, the operation should result in minimal adverse environmental effects.

Steven L. Pilcher

Steven L. Pilcher
Water Quality Bureau
Environmental Sciences Division

SLP:vlf
Attachment
cc: Ben Wake
Air Quality Bureau



Sutton Ranch
Swine Operation

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Department of Health and Environmental Sciences
STATE OF MONTANA HELENA, MONTANA 59601

~~John S. Anderson M.D.~~
DIRECTOR
A. C. Knight, M. D., F. C. C. P.
ACTING DIRECTOR

April 1, 1976

APR 2 1976
STATE DOCUMENTS

State Library, Helena
Board of County Commissioners, Flathead County Courthouse, Kalispell
City-County Planning Board, Room 3, the Ford Building, Kalispell
Mr. B. C. McIntyre, M.D., Co. Health Officer, Box 427, Whitefish
County Sanitarians' Office, Box 919, Kalispell
Kalispell Branch Office, Box 1031, Kalispell
Environmental Quality Council, Helena
Department of Fish and Game, Helena
Mr. Floyd Eads, 1210 Rhodes Draw, Kalispell

PRELIMINARY ENVIRONMENTAL REVIEW FOR THE STW SWINE RANCH

Pursuant to the Montana Administrative Code, Section 16-2.2(2)-P2030 (Rule IV), the following preliminary environmental review has been prepared by the Department of Health and Environmental Sciences concerning the STW Swine Ranch and a request by Mr. Floyd Eads for a waste discharge permit for that animal confinement facility located northwest of Kalispell, Montana.

The purpose of this preliminary environmental review is to inform all interested governmental agencies and public groups of the proposed action and to determine whether the action may have a significant effect on the human environment. This preliminary environmental review will be circulated for a period of ten days at which time a decision will be made as to whether or not a waste discharge permit should be issued. If you care to comment on this proposed action, please do so within that allotted time.

Mr. Floyd Eads currently operates a total confinement swine operation located in the SE¼, NW¼, Sec. 13, T. 29 N., R. 23 W., of Flathead County. The site of this animal confinement facility is approximately nine miles northwest of Kalispell, Montana and is indicated on the attached map.

This animal confinement facility has a capacity for approximately 900 animals which are housed in three separate buildings. Waste material which is generated by the livestock is periodically flushed with water into a large storage tank. This liquid manure storage facility has capacity to store approximately 120 days total wastewater production. The waste material which accumulates within this storage facility will then be

periodically removed and disposed of in liquid form on nearby agricultural land. The owner of the animal confinement facility has contracted with a nearby farm operator. The waste material will then be utilized for its nutrient value with little, if any, detrimental effects to soils or crops.

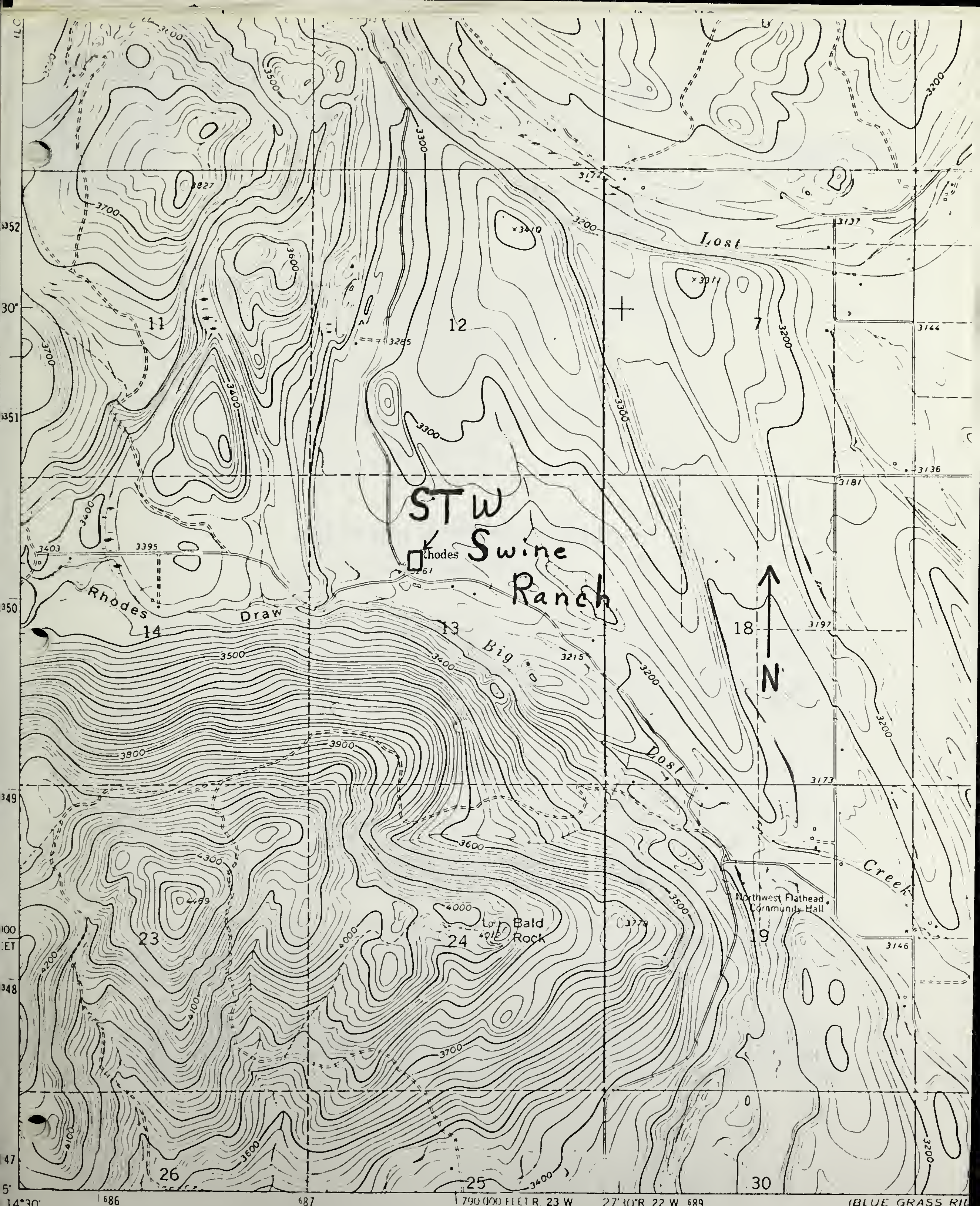
Flies around the animal confinement facility will be controlled through the application of effective fly baits. Dead animals are disposed of through incineration.

Any animal confinement facility will have an effect on the surrounding environment, but adverse environmental effects can be minimized through adherence to a good waste management program. Representatives of the Air Quality Bureau of the Department of Health and Environmental Sciences have been contacted with regard to odor problems from this animal confinement facility and have stated that odors as such should not be a problem for adjacent areas.

The only alternative available to Mr. Eads would be relocation of the existing animal confinement facility. The entire area surrounding the proposed site is currently utilized primarily for agricultural production and such relocation does not appear economically justifiable. There are no known historical or archaeological sites which would in any way be affected by the existing facility and due to the fact that it is an existing facility, it should not place unusual demands on additional environmental resources. If the waste management program as outlined in the permit application is adhered to, the operation should result in minimal adverse environmental effect.

Steven L. Pilcher
Steven L. Pilcher
Water Quality Bureau
Environmental Sciences Division

SLP:vlf
Attachment
cc: Ben Wake
Air Quality Bureau



Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography by photogrammetric methods from aerial

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Department of Health and Environmental Sciences
STATE OF MONTANA HELENA, MONTANA 59601

John S. Anderson M.D.
DIRECTOR
A. C. Knight, M. D., F. C. C. P.
ACTING DIRECTOR

February 25, 1976

APR 9 1976
STATE DOCUMENTS

✓State Library, Helena
Board of County Commissioners, Flathead County Courthouse, Kalispell
City-County Planning Board, Room 3, The Ford Building, Kalispell
B. C. McIntyre, M.D., Co. Health Off., Box 427, Whitefish
County Sanitarians' Office, Box 919, Kalispell
Kalispell Branch Office, Box 1031, Kalispell
Environmental Quality Council, Helena
Department of Fish and Game, Helena
Mr. Fonda Fisher, 1225 Mooring Road, Columbia Falls
Mr. Mike Allison, Route 1A, Columbia Falls
Mr. Don Hofer, Route 1A, Columbia Falls
Mr. Don Reynolds, 1140 Mooring Road, Columbia Falls

PRELIMINARY ENVIRONMENTAL REVIEW
FOR THE
FONDA FISHER FEEDLOT

Pursuant to the Montana Administrative Code, Section 16-2.2(2)-P2030 (Rule IV), the following preliminary environmental review has been prepared by the Department of Health and Environmental Sciences concerning the Fonda Fisher feedlot and a request by Mr. Fonda Fisher for a waste discharge permit for the proposed animal confinement facility located near Columbia Falls, Montana.

The purpose of this preliminary environmental review is to inform all interested governmental agencies and public groups of the proposed action and to determine whether the action may have a significant effect on the human environment. This preliminary environmental review will be circulated for a period of ten days at which time a decision will be made as to whether or not a waste discharge permit should be issued. If you care to comment on this proposed action, please do so within that allotted time.

Mr. Fonda Fisher proposes to construct and operate an animal confinement facility located in the SW¼NW¼, Sec.10, T.29N., R20W., of Flathead County. The proposed site of this operation is approximately seven miles southeast of Columbia Falls and is indicated on the attached map.

Mr. Fisher proposes to construct, in three phases, a facility having ultimate capacity for approximately 575 head of swine. When the third phase is completed in 1977, the facility will consist of farrowing through finishing operations. The waste material which is produced by the livestock will be periodically scraped onto a concrete apron which parallels the livestock pens. From here, it is removed and disposed of on surrounding agricultural land. Approximately 400 acres of such land would be available for solid waste disposal. Any surface runoff which would be generated from precipitation falling on the feeding floors would be diverted onto adjacent cropland. Due to the relatively flat slope and the soil characteristics of that land, there is little possibility that this waste material would ever reach state waters and would, therefore, have little effect on aquatic life in that area. The waste material which is removed and disposed of on surrounding agricultural land would be therefore utilized for its nutrient value with little, if any, detrimental effects to soil or crops.

Flies around this animal confinement facility will be controlled through a routine baiting program and spraying as necessary. Dead animals will be disposed of at the Flathead County sanitary landfill.

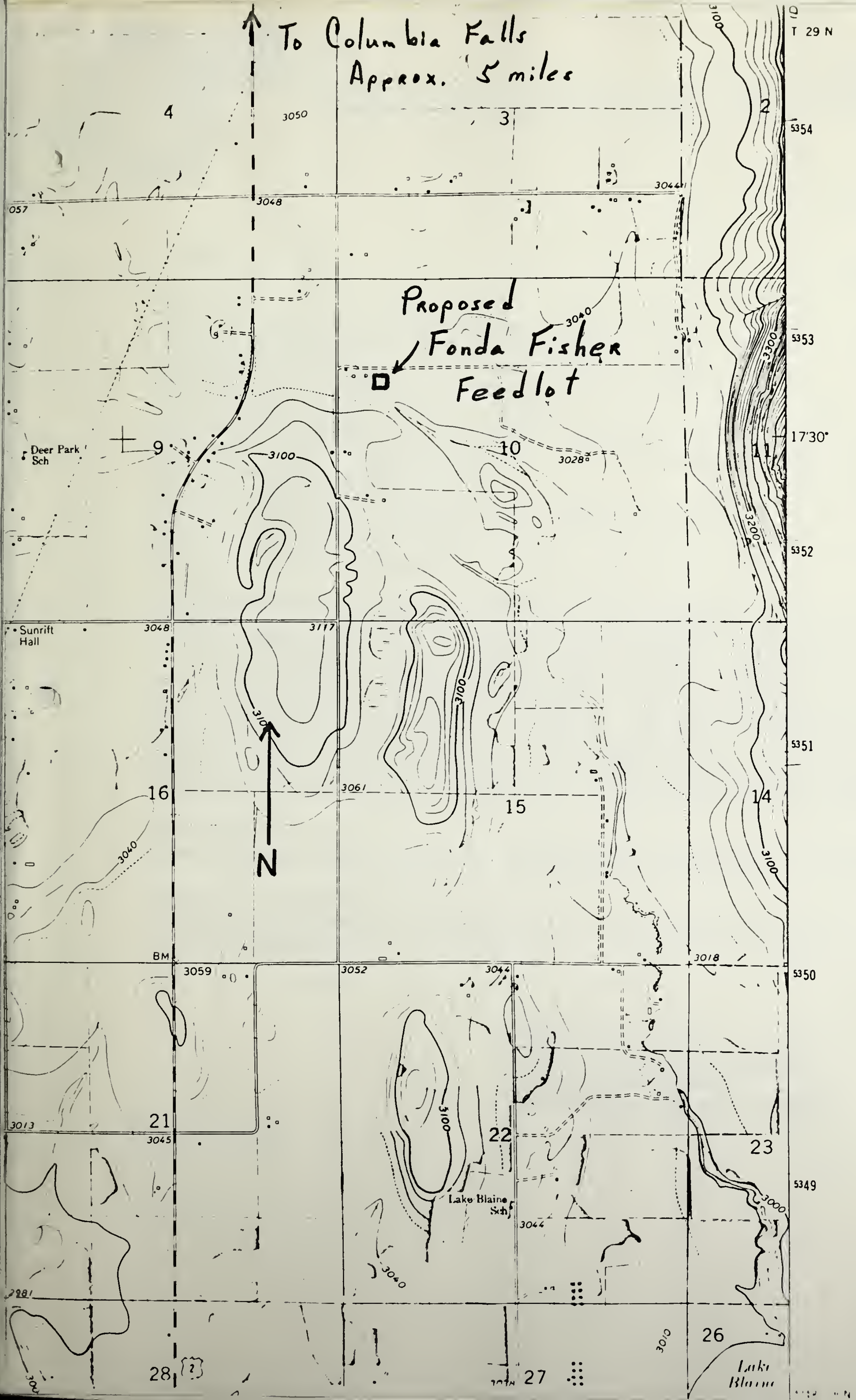
Any animal confinement facility will have an effect on the surrounding environment, but adverse environmental effects can be minimized through adherence to a good waste management program. Representatives of the Air Quality Bureau have stated that the wind direction is primarily from the south except for swirling effects from the mountains and canyon area. In their estimation, odors from this animal confinement facility should not create a problem.

The alternatives available to Mr. Fisher would be relocation of the proposed animal confinement facility. The entire area surrounding the proposed site is currently utilized primarily for agricultural production with small animal confinement facilities located throughout. There are no known historical or archaeological sites which would in any way be affected by the proposed facility and the proposed operation should place no unusual demands on other environmental resources. If the waste management program as outlined in the permit application is adhered to, the operation should result in minimal adverse environmental effect.

Steven L. Pilcher

Steven L. Pilcher
Water Quality Bureau
Environmental Sciences Division

SLP:vlf
Attachment
cc: Ben Wake
Air Quality Bureau


To Columbia Falls
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Department of Health and Environmental Sciences
STATE OF MONTANA HELENA MONTANA 59601

John S. Anderson M.D.
DIRECTOR

STATE DOCUMENTS

DOCUMENTS

OCT 01 1973

October 9, 1973

Board of County Commissioners, Courthouse, Red Lodge
County Planning Office, Box 460, Red Lodge
William Asbury, M.D., County Health Officer, Bridger
Rodney Fink, Sanitarian, Courthouse, Columbus
Environmental Quality Council, Helena
Fish and Game Department, Helena
Department of Intergovernmental Relations, Division of Planning, Helena
Alf Hulteng, Box 20296, Billings
Darrel Booth, 3125 Sequois Lane, Billings
Student Environmental Research Center, Room 212 Venture Center, Missoula
Montana State Library, Helena
Soil Conservation Service, Box J, Joliet

The Water Quality Bureau has conducted an environmental review on the proposed Tipi Village (54 lots) subdivision in Sections 4 and 5, Township 8 South, Range 20 East, MPM, Carbon County, Montana. The proposed action will be to remove the sanitary restrictions from this property. The envionmental review process indicated thatthis area can be subdivided if existing vegetation is utilized as much as possible. The Carbon County Planning Office and health department have indicated approval of this subdivision. The developers have provided data to show that drainage of this subdivision property is not in the watershed of the city of Red Lodge water supply. A significant environmental impact is not indicated from the propsed action.

Individual water wells and septic tank systems are proposed. The soil and water conditions are suitable for individual water and sewer systems.

Alternates available to this division are to remove sanitary restrictions or not to remove sanitary restrictions. This division action is not considered significant.

Albert J. Gasvoda
Albert J. Gasvoda, Architect
Water Quality Bureau
Environmental Sciences Division

cc: Ben Wake

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Department of Health and Environmental Sciences
STATE OF MONTANA HELENA, MONTANA 59601

John S. Anderson M.D.
DIRECTOR

August 20, 1973

STATE DOCUMENTS
AUG 22 1973

Board of County Commissioners, Courthouse, Bozeman
City-County Planning Department, Courthouse, Bozeman
City-County Health Department, Box 639, Bozeman
Environmental Quality Council, Helena
Fish and Game Department, Helena
Department of Intergovernmental Relations, Division of Planning, Helena
Donald Townsend, c/o Survco, Inc., 105 Commercial Drive, Bozeman
Student Environmental Research Center, Room 212 Venture Center, Missoula
Ken Porter, 502 South Grand, Bozeman
Ric Graetz, Box 894, Helena
Montana State Library, Helena

The Water Quality Bureau has conducted an environmental review for the following proposed subdivision:

> Aspen Basin located in the N 1/2, NE 1/4, Section 20, Township 2 South, Range 5 East, MPM, Gallatin County, Montana.

The proposed action would be to remove sanitary restrictions from the property. With the exception of Lots 11, 12, 13, 14 and 15, the environmental review process did not indicate a significant environmental impact from the proposed action. The soil and water conditions are suitable for individual water and sewer systems without contamination of surface or groundwater.

Lots 11, 12, 13, 14, and 15 do not meet state minimum standards for individual water and sewer systems. High groundwater conditions exist on these lots.

Alternatives available to this division are to remove sanitary restrictions except from lots 11, 12, 13, 14 and 15 or not remove sanitary restrictions. This division action is not considered significant.

A. P. Keppner

A. P. Keppner, Soils Scientist
Water Quality Bureau
Environmental Sciences Division

APK:sh
cc: Ben Wake

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Department of Health and Environmental Sciences
STATE OF MONTANA HELENA, MONTANA 59601

John S. Anderson M.D.
DIRECTOR

August 23, 1973

STATE DOCUMENTS

AUG 29 1973

Board of County Commissioners, Courthouse, Philipsburg
City-County Planning Department, Courthouse, Philipsburg
J. P. Cunningham, M.D., County Health Officer, Philipsburg
John Peterson, Sanitarian, Courthouse, Anaconda
Environmental Quality Council, Helena
Fish and Game Department, Helena
Department of Intergovernmental Relations, Division of Planning, Helena
David R. Carlson, Box 41 Gruber Estates, Clancy
Mr. and Mrs. A. T. Edwards, Star Route Box 66, Georgetown Lake, Anaconda
Student Environmental Research Center, Room 212 Venture Center, Missoula
Montana State Library, Helena

The Water Quality Bureau has conducted an environmental review for the following proposed subdivision:

> Lots 7 and 8, Block 1, Edwards Tracts located in the SW 1/4 Section 24, Township 5 North, Range 14 West, MPM, Granite County, Montana.

The proposed action would be to remove the sanitary restriction from this property. The environmental review process did not indicate a significant environmental impact from the proposed action. The area is contiguous to residential development in the Georgetown Lake area. Individual water and sewer systems are proposed. The soil and water conditions are suitable for individual water and sewer systems without contamination of surface or groundwater.

Alternatives available to this division are to remove sanitary restrictions or not to remove the sanitary restrictions. This division action is not considered significant.

A. P. Keppner

A. P. Keppner, Soils Scientist
Water Quality Bureau
Environmental Sciences Division

APK:sh
cc: Ben Wake

Wilson Jones. [illegible] U.S.A.
C447-1[illegible] Rep. Cover
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C447-13B BLACK
C447-13BL DARK BLUE
C447-13L LIGHT BLUE
C447-13Y YELLOW